Project No. 2001/316
QI03037

A new strategic R&D plan for Queensland fisheries

A 'living document' approach to implementation of priorities

Bob Pearson

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Smart State smart fishing

FISHERIES RESEARCH & DEVELOPMENT CORPORATION

Queensland Government
Department of Primary Industries

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The Department of Primary Industries seeks a better quality of life for all Queenslanders—a quality of life supported by innovative world-class food and fibre industries, by responsible and ecologically sustainable use of natural resources and by capable and self-reliant rural communities.

Our business is about:

- innovative science and commercial uptake of new technology by food and fibre industries
- sustainable use of natural resources
- food safety and protection against imported pests and diseases
- market-driven and ethical food and fibre production and
- capable rural communities achieving prosperity and self reliance through successful rural businesses.

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Brisbane Qld 4001

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Non-technical summary

The Queensland Fishing Industry Research Advisory Committee (QFIRAC) undertook a one-year period of consultation with stakeholders (industry sectors and R&D providers) to develop a new Strategic R&D Plan.

The plan's purpose is to identify the research priorities of industry and resource managers and facilitate the meeting of those needs by research providers.

The Plan was released in June 2002 to coincide with the new round of applications to FRDC for 2003-04. The plan is also available on QFIRAC's website (http://www.dpi.qld.gov.au/fishweb/7751.html). The plan has been endorsed by the Fishing Industry Development Council, Queensland's peak industry-government consultative body.

QFIRAC is now engaged in consultative processes with stakeholders to ensure the plan is kept up to date.

Acknowledgements

The development of QFIRAC's Strategic R&D Plan has been a team effort by QFIRAC Members, the Chair and Secretary.

Funding for this project was provided by the Fisheries Research and Development Corporation and the Department of Primary Industries, Queensland.

Background

The Queensland Fishing Industry Research Advisory Committee (QFIRAC) developed and published its first R&D Strategic Plan in 1996, following a successful funding application to FRDC (Project 1993/252).

The 10 year plan (Queensland Fisheries Research and Development Strategy (1995-2005)) was developed over a series of workshops that involved all key stakeholders in late 1995. This plan was updated in 1997 following another workshop of key stakeholders. This update (*QFIRAC R&D priorities: Short term priority areas (1998-2000)*) was released in June 1998.

Since then, major changes have occurred in Queensland's fisheries which include:

- The decision by the Department of Primary Industries, Queensland (DPI) and its major industry stakeholders to embark on a process of futuring to identify a vision for the industry in the year 2010, and what strategies would be needed to achieve that vision. This process, which was part-funded by FRDC (project 1999/354), included an examination of the R&D strategies that would be needed to achieve the vision.
- Fisheries management and R&D was restructured within DPI. The State Government's statutory authority responsible for fisheries management the Queensland Fisheries Management Authority (QFMA) was amalgamated with the DPI's Fisheries Group to form the Queensland Fisheries Service (QFS), and R&D staff were transferred to a separate R&D Business Group in DPI known as the Agency for Food & Fibre Sciences (AFFS).
- State Cabinet decided that the newly reconstituted peak body, the Fishing Industry Development Council (FIDC) would have as one of its tasks, the identification of strategic R&D priorities for the industry. QFIRAC, as part of its mandate, reported to FIDC on R&D matters, and was expected to play a major role in this identification of priorities.
- From July 2000 to mid-2001 the QFMA's Management Advisory Committees (MACs) were put in abeyance following the amalgamation. These MACs had previously provided advice on the R&D priorities of each fishery. During this time there was no process in place that identified R&D priorities.

Because of these changes, QFIRAC, which had previously commenced a review of R&D priorities, was unable to reformulate its strategic plan for R&D in Queensland. Instead it prepared and published a simple list of key priorities in May 2001 prior to the call for the 2002/03 round of FRDC funding.

Need

The simple list of priorities identified by QFIRAC prior to the current round of R&D was prepared as a short term measure, prior to a full examination of all the relevant issues and the development of a 3-5 year plan. Since the production of QFIRAC's original R&D Strategic Plan several key stakeholders have reported on completed R&D, or reviewed their priorities for R&D. (refs. 1-6).

Research Advisory Bodies (FRAB) advise *inter alia* the FRDC on the appropriateness and priority of R&D. The changes in fisheries management in Queensland reported above in the Background section, and the contents of the reports and reviews alluded to here, suggest that QFIRAC must revisit not only its R&D priorities, but also the way in which it interacts with its stakeholders. This will ensure that it recommends R&D which is timely, of high priority and of use to its stakeholders. The aim is to ensure that R&D is performed by research providers who are informed of contemporary needs, have the best technical competence, and

ensure that research results are of use to, and understood by, the end users.

References

1. Anon. 1997. Research needs and priorities for the management of Queensland's fisheries. QFMA, Brisbane. 16pp.
2. Anon. 1998. The Seafood industry's strategic plan for achieving seafood excellence. Seaqual, Canberra. 12pp.
3. Anon, 2000. Australian Prawn Farmers Association Inc. Research & Development Plan November 2000
4. Anon, 2000. *Investing for Tomorrow's Fish: the FRDC's Research and Development Plan, 2000 to 2005*. FRDC, Deakin West, ACT Australia 165 pp.
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7. Kirkwood, J. 2000. Marine Fish Habitat Research. Strategic Plan 2000-2002. A whole of ecosystem approach. DPI Brisbane Qld. 10pp.
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11. Williams, L E 1997. Queensland's Fisheries Resources. Current Condition and Recent Trends 1988-1995. DPI Brisbane. 101pp.

Objectives

The objectives of the project were:

1. The development and publication of a Strategic Plan for R&D in Queensland that incorporates a process for continuous improvement in the identification of change in R&D priorities and communication between stakeholders.
2. The development and adoption of an operating process for QFIRAC that will enhance its interaction with all research providers and funders in Queensland, and maximise the outcomes of each dollar spent on R&D.

In addition to these two objectives FRDC requested that the following matters be addressed.

- *The R&D plan must clearly articulate to the FRDC's 2000-2005 R&D plan.*
- *The R&D plan must describe the linkages with the Qld MAC process for R&D planning*
- *The final report will contain a description of the process for developing the R&D plan with the plan forming an appendix to the final report. The final report should be sufficiently detailed so that future readers can use it to guide them in revising the plan.*

Methods

Over a 12-month period from July 2001 to June 2002 QFIRAC undertook a series of consultative processes in the development of its R&D Plan. These included the following:

- Conducted one-day fora with R&D providers and industry stakeholders back-to-back with the normal schedule of meetings in Townsville (August 2001) and Brisbane (October 2001).
- Established a research subcommittee to oversee the out-of-session planning for a major stakeholder workshop and subsequent events.
- Identified and summarised by fishery, past R&D, and work in progress related to Queensland's fisheries.
- Recruited a professional facilitator to help plan and hold a one-day workshop in association with the *2001 Seafood Directions* conference in Brisbane at the end of November 2001. The workshop involved about 30-40 invited participants and several key speakers (including a representative from the Ministry of Fisheries in New Zealand).
- Conducted follow-up interviews with each of the key stakeholder sectors – the MACs, industry sectors (commercial, recreational, seafood and aquaculture), conservation, resource management (DPI and GBRMPA) and research providers.
- Prepared a draft R&D plan that was circulated to these stakeholders for comment.
- Sought endorsement of the plan from the FIDC.
- Released the final plan prior to the new round of FRDC funding for 2003-04 that commenced with QFIRAC's public call for preliminary proposals in June 2002.

Results/Discussion

The essence of the project was a lengthy process of consultation on R&D priorities with stakeholders. The process commenced with two R&D fora following QFIRAC meetings in the second half of 2001, and concluded with FIDC's endorsement of the plan in June 2002.

R&D Fora (August and October 2001)

QFIRAC took the opportunity to sponsor one-day fora with stakeholders (industry and R&D providers) immediately following its regular scheduled meetings in August (Townsville) and October (Brisbane). Each forum involved a series of short presentations from stakeholders followed by an open discussion of various issues relating to QFIRAC's role, priorities, processes and procedures. The QFIRAC Chair (Dr Peter Young) and Secretary (Mr Bob Pearson) took notes of key issues for subsequent consideration. A list of forum participants is presented at the end of Dr Peter Young's report (see next section).

Stakeholder Workshop, 26 November 2001)

On 26 November 2001 a one-day stakeholder workshop was conducted in Brisbane. Participants at this workshop identified which of the Queensland Fishing Industry Development Council's published strategies were most relevant to R&D. A detailed report on the workshop by the QFIRAC chair Dr Peter Young is presented in Appendix 3.

The conclusions of the workshop were as follows (page 39):

> "Although there was considerable variability between scores of the participants for the various (FIDC) sub-strategies, which also showed in the mean participant group scores, there were clear preferences demonstrated in which there was a large degree of consensus regarding the most important strategies and sub-strategies for R&D in Queensland.
> The *Ecologically Sustainable Fishing and Aquaculture* strategy was generally considered to be twice as important as the other three strategies. There was also general agreement by all but one participant group that *Managing Change in Fisheries* was the next most important,

followed by *Smart Delivery* and *Cooperating to Deliver*, which were considered to be about equal in importance".

Identifying the relationship between FIDC's vision and stakeholder R&D priorities (February 2002)

QFIRAC met on 1 February 2002 to consider Dr Young's workshop report and to identify the next stage of the project. In response to one of FRDC's special conditions to be met in the project agreement, namely that "*the R&D plan must clearly articulate to the FRDC's 2000-2005 R&D plan"*, QFIRAC members developed a matrix of FRDC's R&D Programs and Strategies and aligned these against those FIDC's Strategies & sub-strategies for R&D that had been identified at the 26 November workshop. The R&D matrix framework was sent to all key stakeholders, including all MACs, with a request for them to identify where their existing R&D priorities best fitted in the matrix. All the completed matrices were collated into one summary matrix (Appendix 4).

Stakeholder interviews (March 2002)

On 5-6 March several QFIRAC members including the chair and secretary (Bob Pearson) conducted one hour interviews to discuss the R&D priorities of each stakeholder group (including interviews with representatives of all MACs and where possible their Scientific Advisory Groups, and with representatives of other peak bodies where there was no MAC equivalent). These interviews identified a number of key research areas. A summary report is attached (Appendix 5).

The newly established MACs have now been asked to update their strategic plans for R&D and to communicate these to QFIRAC, preferably at the open fora in North Queensland and South Queensland that have now been constituted as part of the annual timetable of QFIRAC.

First draft of R&D Plan (March 2002)

A special meeting of QFIRAC was held on 21 March 2002 to consider the results of the interviews and matrix information, and to identify what else was needed to develop the final strategic plan by the end of May 2002.

The meeting agreed to the following process.

- Secretary to prepare:
  - a draft of the key research areas and sub-headings
  - tables relating the key areas to the priorities of those stakeholders that were interviewed and to those of FIDC and FRDC.
  - a draft of the QFIRAC process, including the assessment criteria and timetable for 2002.
- Secretary to circulate draft to members for comment by early April.
- Secretary to send an revised draft to stakeholders for comment by mid-April, not only to identify any errors of fact, but also to seek any other opinions. Deadline for comments is mid-May.
- Secretary to collate comments and circulate to members.
- Members to finalise plan & priorities at the next meeting on 29 May.

Finalisation and release of R&D Plan (May 2002)

At the QFIRAC meeting on 29 May 2002 the Chair sought comments on the draft plan. The Secretary incorporated agreed changes in the draft and circulated the final draft to members on 30 May for their approval by 31 May. The plan was released on Monday 3 June 2002. Copies of

the plan were sent to FIDC members for their endorsement. The copy of the plan is attached (Appendix 6).

Endorsement of R&D Plan by FIDC (June 2002)
The Chair presented the plan to the FIDC meeting on 14 June 2002. FIDC endorsed the plan during that meeting.

Communication of R&D Plan to stakeholders (June to October2002)
The plan was e-mailed to R&D providers and industry stakeholders on 3 June along with the call for preliminary proposals for the new round of FRDC funding.

A QFIRAC website was established in late June 2002 and includes a text version of the Strategic Plan. The site is hosted by DPI and forms part of the FISHWEB site. The address is: http://www.dpi.qld.gov.au/fishweb/7751.html. Negotiations commenced with FRDC with a view to the Corporation ultimately hosting all FRAB websites.

Immediately following its regular scheduled meetings in August (Townsville) and October (Brisbane), QFIRAC sponsored half-day fora of stakeholders (industry and R&D providers). The purpose of these fora was to make people aware of the plan's existence and to seek comments on the plan and the process for its regular update. Some useful comments were received, for example on fish health R&D priorities, and these will be considered by QFIRAC during March-May 2003, when the plan is scheduled to be updated (see the section below on **Further Developments**).

Benefits

The benefits of this project flow:

- to R&D providers in Queensland who now have a clearer understanding of the R&D priorities that they should be addressing in their applications to FRDC.
- to the users of R&D, both industry and managers, who now have researchers addressing their most important priorities.

Evidence of the new plan's influence was shown by the change in the emphasis of preliminary proposals submitted in August 2002. Almost all the proposals addressed QFIRAC's key R&D areas that were laid out in the Strategic Plan, and many of these addressed areas which had hitherto been neglected. One example of this was the greatly increased numbers of preproposals for R&D in the socio-economic key research area. This had hitherto been a neglected field.

Further development

At its next scheduled meeting on 5 February 2003 QFIRAC intends to discuss a process to be used to update the plan. This could take the form of holding the two fora of stakeholders (industry sectors and R&D providers) in North and South Queensland in March-April. The plan could be updated as part of the two fora, i.e. QFIRAC holds the fora, then afterwards looks at the outcomes of the fora against the Strategic Plan, reviews changes, then implements them in the Web document, together with dates of changes. This process to include reviewing the MAC and the Aquaculture industry's R&D plans as they are updated.

Planned outcomes

The objective of the new R&D Strategic Plan, and the process used to keep it a "living" document, is to ensure that the needs of the various industry sectors and fisheries resource managers are being met by well focussed, cost-effective R&D projects by research providers.

Conclusion

The project has successfully achieved its objectives of developing a new strategic plan for R&D in Queensland after wide consultation with stakeholders and publishing the plan in time for the new QFIRAC-FRDC funding application round in 2002. QFIRAC's operating process is has been made transparent in the plan and through its availability on QFIRAC's website. An ongoing process for ensuring that the plan remains a living document will be determined in the first half of 2003.

References

nil

Appendix 1

Intellectual property

There are no intellectual property issues associated with this project.

Appendix 2

List of people engaged on project

The Chair and QFIRAC members participated in all or some of the planning activities including QFIRAC's research subcommittee.

Mr Martin Breen
Mr Jim Gillespie
Dr Paul Grieve
Ms Dorothea Huber
Dr Daryl McPhee
Mr Steve Morgan
Mr Bob Pearson, Secretary
Ms Kirsti Sampson
Mr Duncan Souter
Mr Craig Winkel
Dr Peter Young, Chair
Ms Imogen Zethoven

Appendix 3

QUEENSLAND FISHING INDUSTRY RESEARCH ADVISORY COMMITTEE

QFIRAC RESEARCH AND DEVELOPMENT WORKSHOP – 26/11/01

By

Peter C. Young
Chair, QFIRAC

January 2002

Queensland Government
Department of Primary Industries

FISHERIES RESEARCH & DEVELOPMENT CORPORATION

QFIRAC Research & Development workshop - 26/11/01
Peter Young – Chairman QFIRAC

INTRODUCTION

Since the production of QFIRAC's original R&D Strategic Plan several key stakeholders have reported on completed R&D, or reviewed their priorities for R&D. These include:

1. Anon. 1997. Research needs and priorities for the management of Queensland's fisheries. QFMA, Brisbane. 16pp.
2. Anon. 1998. The Seafood industry's strategic plan for achieving seafood excellence. Seaqual, Canberra. 12pp.
3. Anon, 2000. Australian Prawn Farmers Association Inc. Research & Development Plan November 2000
4. Anon, 2000. *Investing for Tomorrow's Fish: the FRDC's Research and Development Plan, 2000 to 2005*. FRDC, Deakin West, ACT Australia. 165 pp.
5. Anon 2001. GBRMPA's Research Priorities
6. Anon, 2001. Investing in a sustainable fishing future: The national research and development plan for the recreational sector of the Australian fishing industry
7. Kirkwood, J. 2000. Marine Fish Habitat Research. Strategic Plan 2000-2002. A whole of ecosystem approach. DPI Brisbane Qld. 10pp.
8. Newman, G 1998. *Research Priorities for Australian Fisheries and Aquaculture*. Standing Committee on Fisheries and Aquaculture, Canberra. 22pp.
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11. Williams, L E 1997. *Queensland's Fisheries Resources. Current Condition and Recent Trends 1988-1995*. DPI Brisbane. 101pp.

Most importantly, the Fishing Industry Development Council (FIDC) has now completed a strategic futuring project in which a common vision for the future of fisheries in Queensland was agreed by the process of "foresighting". This vision is being published in the pamphlet "Pathway to the future 2001 Queensland Fishing Sector Interests, building smart futures for fisheries sectors". The results of this project are especially significant as they represent a consensus across all significant stakeholders, of the type of future they all agreed they wanted for all the sectors involved.

Fisheries Research Advisory Bodies (FRABs) in each State advise the FRDC on the appropriateness and priority of R&D. The changes in fisheries management in Queensland, and the contents of the reports and reviews alluded to above, required QFIRAC to revisit not only its R&D priorities, but also the way in which it interacts with its stakeholders. This will ensure that it recommends R&D which is timely, of high priority, and of use to its stakeholders. The aim is to ensure that R&D is performed by research providers that are informed of contemporary needs, have the best technical competence, and ensure that research results are of use to, and understood by, the end users.

DEVELOPMENT OF R&D PRIORITIES

With these goals in mind, QFIRAC has started a process of consultation and evaluation the objectives of which are:

1. The identification and publication of a Strategic Plan for R&D in Queensland that incorporates a process for continuous improvement in the identification of change in R&D priorities and communication between stakeholders.

2. The identification and adoption of an operating process for QFIRAC that will enhance its interaction with all research providers in Queensland, and maximise the outcomes of each dollar spent on R&D.

The outcomes will identify, in an ongoing manner, the new R&D needs for the fishing industry in Queensland resulting from changes in fisheries management and government policy, or identified by industry and other stakeholders.
As part of this process two public fora were held during 2001, one in Townsville, and the other in Brisbane (see Appendix 1 and 2 for a list of participants). At the fora opinions were sought from stakeholders of their views regarding the R&D issues facing Queensland fisheries.
Following the public fora, a planning workshop was held in Brisbane to develop a framework to support the identification and funding of R&D consistent with the goals of the 2010 futuring project described above.

WORKSHOP PLANNING

An FRDC-funded workshop was held in Brisbane in late November 2001. (This was timed to coincide with the major national *Seafood Directions* conference in Brisbane). QFIRAC had been informed, and was of the opinion itself, that if the visions, goals and strategies of the FIDC futuring project were accepted as government policy in Queensland, then R&D effort should be directed towards achieving those goals. It was difficult, however, to clearly discriminate which of the FIDC's strategies and sub-strategies would be best assisted by R&D. For this reason the workshop investigated, with the assistance of significant stakeholders, a framework to support the identification and funding of R&D consistent with the goals of the 2010 futuring project described above.

As part of the planning for the workshop eight major sectors associated with Fishing and Aquaculture were identified and representatives of each were invited to participate. These were:

1. Indigenous fishing
2. Environmentalists
3. Marketing
4. Recreational fishing
5. Commercial fishing
6. Fisheries researchers
7. Fisheries managers
8. Aquaculturalists

Prospective participants were identified from within each of these sectors, and invited to participate in the workshop.

The workshop was facilitated by Ian Plowman DPI, and took the form of four presentations giving background information followed by evaluation for the purpose of R&D of the strategies and sub-strategies of the 2010 futuring project. Presenters and topics were:

1. Pat Appleton- The goals of the 2010 futuring project
2. John Annala- The New Zealand Ministry of Fisheries R&D strategic process
3. Patrick Hone- The Fisheries Research and Development Corporation Strategic Plan
4. Nick Ruello- Strategic R&D Needs for Marketing & Processing.

Prior to the workshop, participants were placed into 5 groups and during the workshop the groups were identified by coloured markers. These were:

1. Indigenous/environmentalists	red
2. Marketing/invited speakers	green
3. Fishers/recreational and commercial	yellow
4. Researchers	blue
5. QFIRAC	gold
6. Resource managers	silver

Participants were invited to distribute themselves into groups, taking care that each group wherever possible, had representatives of each of the above sectors. Participants at each table then introduced themselves and thereafter they worked together as a group.

The workshop was divided into two sections. In the morning participants listened to the invited speakers and then each table discussed the presentation and asked specific questions.

During the afternoon the workshop participants examined and evaluated the relative importance for R&D of each of the four FIDC strategies for achieving the vision for 2010. Each participant, working individually, allocated a theoretical $20 among the 4 strategies, the amount allocated to each reflecting the relative importance of each strategy. Table scores were then shared and averaged within each table. The table averages were then recorded and comparisons made between tables.

Each strategy identified in the foresighting process has a varying number of sub-strategies associated with it. The same process of allocation, table averaging and recording was made for each sub-strategy within each strategy. Because of the smaller number of sub-strategies associated with 2 of the strategies, in these cases the allocation was made from a theoretical $10.

The aim of the exercise was to:

a. Determine the relative weightings (importance) of each of the four major strategies of the vision for 2010

b. Determine the relative weightings (importance) of the sub-strategies within each of the four strategies.

The two sets of weightings provide a standardised framework for comparing the merits of R&D funding applications relative to one another.

Of the 84 individuals approached, 36 were able to attend. Their names and affiliations are given in Appendix 3.

PRESENTATIONS

Pat Appleton - The Goals Of The 2010 Futuring Project.

The outcomes of the Vision 2010 futuring project were presented and summarised as follows:

The vision for Queensland Fisheries in 2010

- Managing fisheries in accordance with ecosystem-based planning and management
- Producing safe, high quality seafood based products to domestic and global markets
- Delivering a diverse range of world-class fisheries related experiences to leisure, adventure, and recreational markets
- Contributing to a sustainable economic future for Queensland communities
- Working in partnerships with traditional owners and indigenous communities based on agreed cooperative management principles

Strategic Direction for Queensland Fisheries

- Landowners taking more responsibility for offsite impacts and aquatic environments becoming cleaner
- Increasing information base on which to base sound management decisions
- Use environmentally friendly techniques that are highly selective of target species and avoids damaging impacts on benthic communities
- High value added seafood based products as a demand management tool
- A policy framework that facilitates cooperative dialogue among Fishing and Aquaculture interests

Underlying Trends in Queensland Fisheries

- Difficulty of decision-making because of paucity of information
- The impact of climate change on world's oceans and fisheries
- Technology changes the nature of how Fishing and Aquaculture sectors perform and how management can be delivered
- Increasing global demands for fish
- Community perceptions will influence future public policy

Four Key Strategies to Achieve Vision

- Ecological sustainable Fishing and Aquaculture
- Smart delivery of services and products
- Cooperation to deliver outcomes
- Managing change in fisheries

1. Ecological Sustainable Fishing and Aquaculture

- Investing in appropriate research, monitoring and independent auditing capability
- Applying innovative practices that meet ESD requirements
- Expanding information base on which to apply sound management decisions
- Improving the utilization of processing waste from fisheries resources
- Achieving independent environmental certification of fisheries

2. Smart Delivery of Services and Products

- Extension of research results to Fishing and Aquaculture interests quickly and effectively
- Utilizing high levels of knowledge and skills within the sectors

- Developing associated opportunities around fisheries-related products, services and knowledge
- Marketing products and services based on an independent assessment of the ecological sustainability of our fisheries
- Assessing and responding to client and consumer preferences

3. Cooperation to Deliver Outcomes

- Building alliances and networks and working collaboratively on projects
- Being both flexible and focussed on achieving outcomes
- Managing relationships and communications well
- Maximising effectiveness of R&D through relevant structures and systems and reliable funding streams
- Showing strong firm leadership in developing a culture of ecological sustainable use at individual Fishing and Aquaculture interest and FIDC level

4. Managing Change in Fisheries

- Establishing an ecosystem-based approach to the planning and management of fisheries
- Continuous improvement in ecological sustainable development criteria and standards
- Supporting the application of the precautionary principle as the primary tool for change management
- Incorporating global change drivers such as climate change, population dynamics and energy resources into fisheries management planning processes
- Developing the capacity and using the knowledge and skills of Fishing and Aquaculture sector interest groups
- Earning community confidence as responsible managers

Questions Raised

- How are we going to achieve these statements, as there is no action plan yet?
- This overview is very fishery-oriented rather than development oriented, and does not take into account the consumer and market. (A) We need to make sure that development needs to be within strict guidelines.
- Who delivers on the 2010 vision? (A) All are responsible, all have their pathways and some are working actively.
- Who is producing the outcome? (A) Sectors are putting in their plans bases on it
- How is that achievement measured? (A) The fisheries agencies are taking a national look at it.
- What are the costs of achieving it?
- What part did FRDC play in making up the project? (A) FRDC paid for the project and staff attended some meetings.
- If the stakeholders are developing their own pathways how will we achieve the pathways and coordinate them together? (A) We are looking to the sectors to develop pathways themselves and FIDC will bring the groups together.
- How do we maximise the value of R&D and extend it to the stakeholders?
- How will it allow communities to participate in the fishery? (A) We will need to use that sector more in developing the process.

John Annala - The New Zealand R&D Strategic Process

The New Zealand fishing industry produces about $1.2 billion of product each year and recreational fishing is estimated to be worth about $800 million. Each year 80-90 research projects are put up for contestable tender. Industry pays about two thirds of the cost, there is a high level of stakeholder input into research planning, and a priority setting process is run on the research to be done. The R&D planning is done in a strategic context which includes the *Environment 2010* strategy, the *1996 Fisheries Act*, the ministry's goals and strategies, strategic research directions and medium term research plans which may be fishery or issues specific.

The proposals are prioritised on several criteria:

- if they deal with assessment or management issues.
- what are the merits of the results of the proposed research, including that to science?
- what are the benefits and cost of the project in terms of major and minor outputs?

There are 9 major research areas. These are deepwater, middle depths, inshore, shellfish, pelagics, aquatic environment, non-commercial, socio-economic and stock assessment methods.

There is an annual cycle for research planning, four major inputs are drawn together to produce research proposals. These are:

- Stock Assessment Working Groups
- Ministry of Fisheries regional input
- Medium term research plans
- Stakeholders.

The research proposals are examined and developed in Research Planning Groups, then passed via a Research Coordinating Committee. They are examined against the ministry's priorities for the current year, and there is then a process of final consultation before tenders are called for the projects.

The priority setting criteria for projects include:

1. How does the proposed research fit to the Ministry's and Crown's responsibilities and obligations, the Strategic and Medium Term Research Plans for the topic area, and fishery plan for the resource?
2. What is the size/value/importance of the resource or fishery to both the commercial and non-commercial sectors?
3. Are there any assessment and/or management issues?
4. What are the merits of the proposed research?
5. What are the benefits and costs of the project in terms of its major and minor outputs?

Questions Raised

- What are the underlying administration costs involved in the process? (A) About $750,000 to $1 million.
- How does cost-recovery work and how was it phased in? (A) It was put in one go. It is based on a ratio of total allowable commercial catch to the TAC, including recreational and customary use catches. The money is appropriated up front and about 75% of management and 66% of R&D costs are recoverable.
- What is the chance of innovation in R&D? (A) There is no potential for "blue sky" research, but the Research Foundation supports that in parallel.
- How is the contestable tendering done? (A) The ministry puts up specified projects, it does not take proposals from researchers.
- What about small fisheries? (A) The 3-5 year plans pick up 2-3 of these each year and implement monitoring or adaptive management programs where the industry does it themselves. This is proving successful.

Patrick Hone – FRDC's R&D Plan Investing For Tomorrow's Fish 2000-2005

The FRDC's role is to

- Plan, fund and manage research and development programs
- Facilitate the dissemination, adoption and commercialisation of the results of research and development

Their vision is three-fold and is for Industry, the Community, and Fisheries Research.

Three essential components of the R&D Plan:

- Planned outcomes- in effect, the factors that will make a real difference to Australia's fisheries resources and Fishing and Aquaculture industry
- Whole-of-chain focus- an integrated approach that aims to satisfy stakeholder expectations across all aspects of planned activities
- Continual improvement- allows for performance measures to be used to provide feedback for the benefit of future R&D planning

The elements of good planning are:

- Stakeholders who are the intended beneficiaries will participate in determining planned outcomes and priorities through the entire supply chain
- R&D projects embody collaborative partnerships between providers and beneficiaries
- Beneficiaries are encouraged to be more involved in project development and more active in R&D delivery
- R&D benefits from multi-disciplinary approaches: in particular, using providers from biological, social and economic disciplines.

FRDC has identified 9 challenges that will be important factors over the next 20 years:

1. Reaching sustainable levels of fisheries productivity. In the next 2 decades, sustainable use of natural resources will be pursued by solving problems simultaneously on a wide range of fronts.
2. Increasing production from aquaculture. Australia does have many of the prerequisites, and should become a major player in the high-quality end of the market. We need to focus on fewer species to ensure timely development.
3. Discovering new fisheries and under-utilized fish species. Known fisheries in Australia's EEZ have very limited potential for increased production. This places special significance on deriving increased commercial production through discovering new fisheries, and from making better use of fish that are presently under utilised.
4. Reducing by catch and discarded fish. By catch consists of species and sizes taken incidentally in a fishery where other species and sizes are the target. By catch species may be of lesser

economic value than the target species, and are often discarded over the side of the boat- though some with commercial value are retained for sale. By catch species also include marine mammals, seabirds, weed and coral.

5. Reducing the quantity of fish consumed by terrestrial and aquatic livestock so it becomes available in the food chain to satisfy human and environmental needs. World tonnages of fish harvested for terrestrial and aquatic livestock feeds are high and increasing. When these fish are removed from the food chain, the ecological sustainability of fisheries is affected. They are also denied to human consumption.
6. Improving utilisation of processing wastes. Most Australian seafood processing is elementary at present: filleting, peeling, boiling and shucking; and chilling, freezing, or packing such products. Some businesses derive returns from their waste materials by selling them as bait, but most often they use the least costly methods of disposal: typically discarding at sea, flushing it down the drain, or paying for it to be dumped as landfill.
7. Achieving an objectively based and secure access to fisheries resources. To create an operating environment that is conducive to all three sectors of the Fishing and Aquaculture industry actively participating in pursuing ecological sustainability, it is essential to reach an objectively based and secure access to fisheries resources.
8. Optimising market access & development, maximising seafood value, and securing equitable financial returns. The best option for meeting demand for seafood is a profitable commercial sector that optimised market access and derives increasing value from existing production.
9. Development and using the knowledge and skills of people in and supporting the Australian Fishing and Aquaculture industry. Develop the capabilities of the people to whom the industry entrusts its future. To improve communication between them and develop the community's knowledge of, and involvement with, the Fishing and Aquaculture industry.

These nine challenges have been incorporated within 3 major programs.

Program 1: Natural Resource Sustainability

1. Fish biology
2. Interactions between fish and their ecosystems
3. Effects of Fishing and Aquaculture activities on fish and their ecosystems
4. Effects of non-Fishing and Aquaculture activities, pests and pollution on fish and their ecosystems
5. Health of fish and their ecosystems
6. Rehabilitation and enhancement of fisheries and their ecosystems
7. Legislative, institutions, compliance and policy arrangements and their impacts
8. Access to fisheries resources
9. Stock assessment
10. Fisheries and ecosystems management

Program 2: Industry Development

1. Aquaculture development
    a. Production and production systems
    b. Effects of non-aquaculture activities pests and pollution on aquaculture
    c. Site selection and access for marine and land-based aquaculture
    d. Aquaculture management
2. Economic and social values of the industry and its impacts
3. Fishing and Aquaculture technology
4. Legislative, institutional, compliance and policy arrangements and their impacts
5. Market development
6. Health and safety associated with Fishing and Aquaculture activities
7. Quality, food safety and consumer health

8. Value adding

Program 3: Human Capital development.

1. Leadership development
2. Vocational development
3. Consumer education
4. Community education
5. Community involvement.

Questions Raised

- What do you think about more commissioned R&D? (A) Believes that there will be more commissioned R&D from the FRABs.
- How do you get Human Resource Development done to get not "more of the same old thing"? (A) Bring in new people.
- Utilisation of new species, is that developing new fisheries and utilising existing by catch? (A) FRDC is interested in both.
- How amenable is FRDC to Environment Australia's needs for R&D?
- Is FRDC going to go down the route of Human Resource capital development? (A) Not yet spending nearly enough in this area. There is a need to do much more.
- Could FRDC get ahead of the game in R&D into people development for social and traditional participation?

Nick Ruello- Processing And Marketing R&D, Beyond The Comfort Zone

Consumers: There is a need for everyone to become more consumer and market oriented. Consumers are the market drivers, but are frequently forgotten. They want an affordable price, quick and easy meals. They are concerned about safe food and need more information of seafood. They are bombarded by media about the seafood industry and are generally confused. They are uncertain about fishing sustainability the environment and aquaculture.

Processors, Wholesalers and Retailers: These are all businesses that make their margins on turnover. The rate of return on investment and labour is generally poor. They are usually to busy to be well informed, and most of their information is second hand, they are not informed or proactive and are not consumer focussed. Retailers are the shop front of the industry but many need help and need to be brought into the "loop".

Researchers: There are only a few of these in Development, they mostly have an office or laboratory focus, because of the preponderance of short term jobs they are preoccupied with job prospects. When added to the fact that their promotions are mostly a result of peer review of research "science", it naturally follows that most are preoccupied with Research and not Development, Science, not technology. There is a culture of territoriality in regard to areas of research, and many are myopic in their vision. Collaboration is spoken about widely but very seldom happens. For many of the above, some seek to reinvent the wheel when a retread will do. Overall they overlook the consumer and retailer who exist beyond their comfort zone.

R&D Needs and Priorities: In the end it is the Consumers and markets that keep everyone in the seafood business employed. So the R&D should aim at more affordable and better value seafood, which is quicker and easier to eat, more enjoyable and safer. This will reduce uncertainty and confusion about environment fishing and aquaculture and produce good public relations. We need to know more about market and consumer behaviour and attitudes. One good approach would be to have a consumer impact statement for all R&D.

The R&D for more affordable seafood will need to increase supply and constrain prices by:

- Greater utilisation and less processing wastes
- Reduction of quality losses due to poor handling, eg R&D on swordfish to find the causes of flesh softness, either parasites or handling

- Increasing the quantity and quality of product from aquaculture, eg R&D on edible qualities of farmed fish, diet, water management, handling, cooking.

For many of these investigations no new tools are needed the "old technology" is OK and investigations of these will provide excellent cost/benefits for industry and the consumer.
Overall the recommendations for QFIRAC are to consider:

- What are the benefits for the Consumer/Retailer/Wholesaler
- Watch out for myopia and encourage collaboration
- No rebadging of old work or overseas R&D
- Look for true industry need and support, use the $ test, cash is king, true support will be from financial support
- Use the time test: why do researchers always need 3-year data? Is the problem not urgent? or important?
- There is a need for development officers and appropriate technology
- Extension of results needs to be better targeted.

Questions Raised

- How do we make fish more affordable? (A) Put it up as a meal rather than sold as per kilo.
- How do we get markets to accept innovation? (A) Give them presentations using case studies.
- Is FRDC contributed to by seafood marketers. (A) Have to deal with PR, we need scientists to be more responsible about doom and gloom stories.
- Is there a conflict in allocation of industry and government funding to specific firms who will have a competitive advantage? (A) The public money is protected by intellectual property agreements.
- What is the option of high-level generic marketing of seafood? (A) This is not really the answer as most of the answers were not addressing the right questions.
- What would be the type of job of development officers? (A) They need to have the same status as the research officers.
- The industry should be driven by sustainability rather than the markets. (A) No, the industry should first be conscious of what the market wants and then apply sustainability.

THE EVALUATION OF THE 2010 STRATEGIES AND SUB-STRATEGIES

(a) The relative importance of the four strategies.

The four strategies identified in the FIDC's futuring project were:

1. Ecologically sustainable fishing and aquaculture [1]
2. Smart delivery
3. Co-operating to deliver
4. Managing change in fisheries

The relative importance ascribed to each strategy by each table is shown in Table 1. When scores are averaged across all groups of participants, *Ecologically Sustainable Fishing and Aquaculture* scored about twice as high as the rest of the strategies, followed by *Managing Change in Fisheries*, *Smart Delivery*, then *Cooperating to Deliver*.

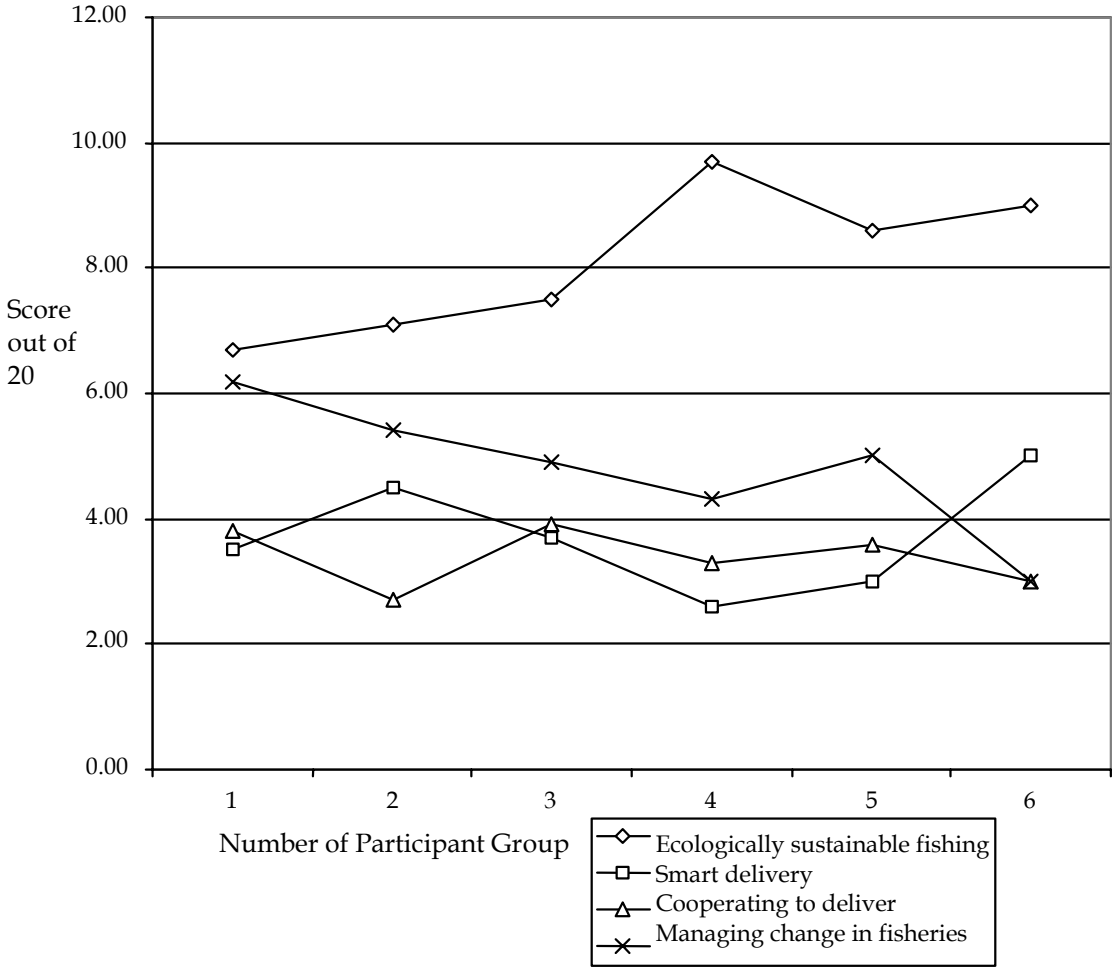
Table 1. Mean scores by participant groups for each of the four strategies

	G1	G2	G3	G4	G5	G6	Av	s.d.
Ecologically Sustainable Fishing and Aquaculture	6.7	7.1	7.5	9.7	8.6	9	8.1	1.1
Smart Delivery	3.5	4.5	3.7	2.6	3	5	3.7	1.1
Cooperating to Deliver	3.8	2.7	3.9	3.3	3.6	3	3.4	0.8
Managing Change in Fisheries	6.2	5.4	4.9	4.3	5	3	4.8	0.4

Strategy 1- *Ecologically Sustainable Fishing and Aquaculture* was considered to be the most important strategy by all groups of participants (Figure 1). The second most important strategy was considered by five of the six participant groups to be *Managing Change in Fisheries*. The sixth group scored this strategy lowest together with *Cooperating to Deliver*. All participant groups ascribed similar importance to *Smart Delivery* and *Cooperating to Deliver*. However the first was scored higher than the second by participant groups 2 and 6, and lower by the four other participant groups.

1 For the purposes of the workshop this FIDC Strategy has been renamed to include aquaculture – Ecologically Sustainable Fishing and Aquaculture

Figure 1. Relative Importance of Each Strategy



(b)The relative importance of the 17 sub-strategies for Ecologically Sustainable Fishing and Aquaculture

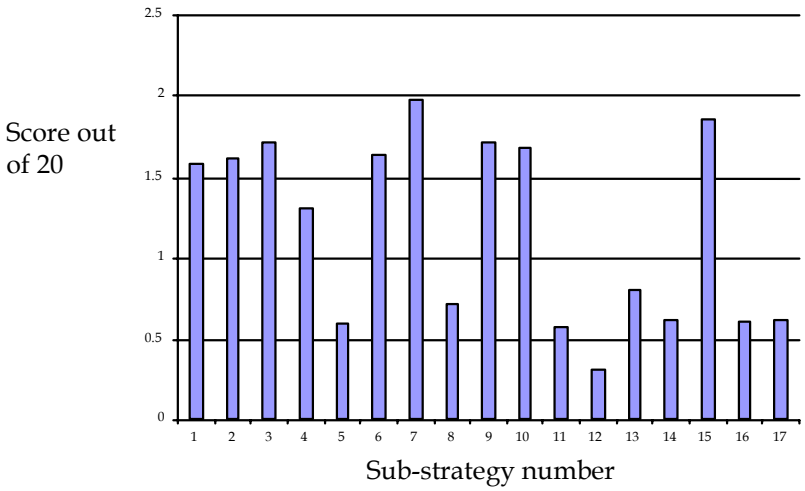
The seventeen sub-strategies identified to pursue *Ecologically Sustainable Fishing and Aquaculture*, together with the mean relative importance ascribed to them by the groups of participants is given in Table 2.

Table 2. Ecologically Sustainable Fishing and Aquaculture- sub-strategy scores

Sub-strategy	G1	G2	G3	G4	G5	G6	AV	s.d.
1. Ethos & Commitment to ESD	2	2	1	2.7	1	0.8	1.6	0.69
2. Partnerships to improve land/water relationships	1.2	2	2	1.5	2	1.3	1.63	0.37
3. Support ecosystem-based planning & management	0.8	3	1	2.2	3	1.3	1.73	0.76
4. Applying precautionary management tools	0.2	2	2	1	1	1.8	1.32	0.64
5. Responding to community expectations of responsible behavior	0.4	1	1	0.7	0	0.6	0.61	0.25
6. Investing in appropriate research, monitoring & independent auditing	1.2	2	2	1.5	2	1.8	1.65	0.37
7. Developing environmentally friendly fishing and aquaculture practices	1	4	2	1.5	2	1.2	1.98	1.10
8. Alliances to remove barriers between fishing and aquacultur interests	0.6	1	1	0.5	1	1	0.73	0.34
9. Applying innovative practices that meet ESD requirements	2.6	2	1	1.5	2	1.6	1.73	0.47
10. Expanding the information base to apply sound managemer decisions	1.4	2	3	1.2	1	1.6	1.7	0.72
11. Meet standards expected by customers	0.8	0	1	0.7	0	0.6	0.58	0.39
12. Create a basis to position against competitors	0.2	0	1	0	0	0.8	0.32	0.35
13. Improve waste utilization	0.6	0	2	1	0	1	0.82	0.53
14. Reduce fish protein fed to terrestrial and aquatic livestock	0.4	1	0	1	1	0.3	0.63	0.40
15. Increase profitability for commercial sectors	5.6	0	1	1	1	2	1.87	1.91
16. Achieve independent environmental certification of fisherie	0.8	0	0	0.7	1	0.5	0.62	0.40
17. Increase awareness of community & fishing and aquacultur interests of dangers of exotic diseases and species	0.2	1	1	1	0	1	0.63	0.37

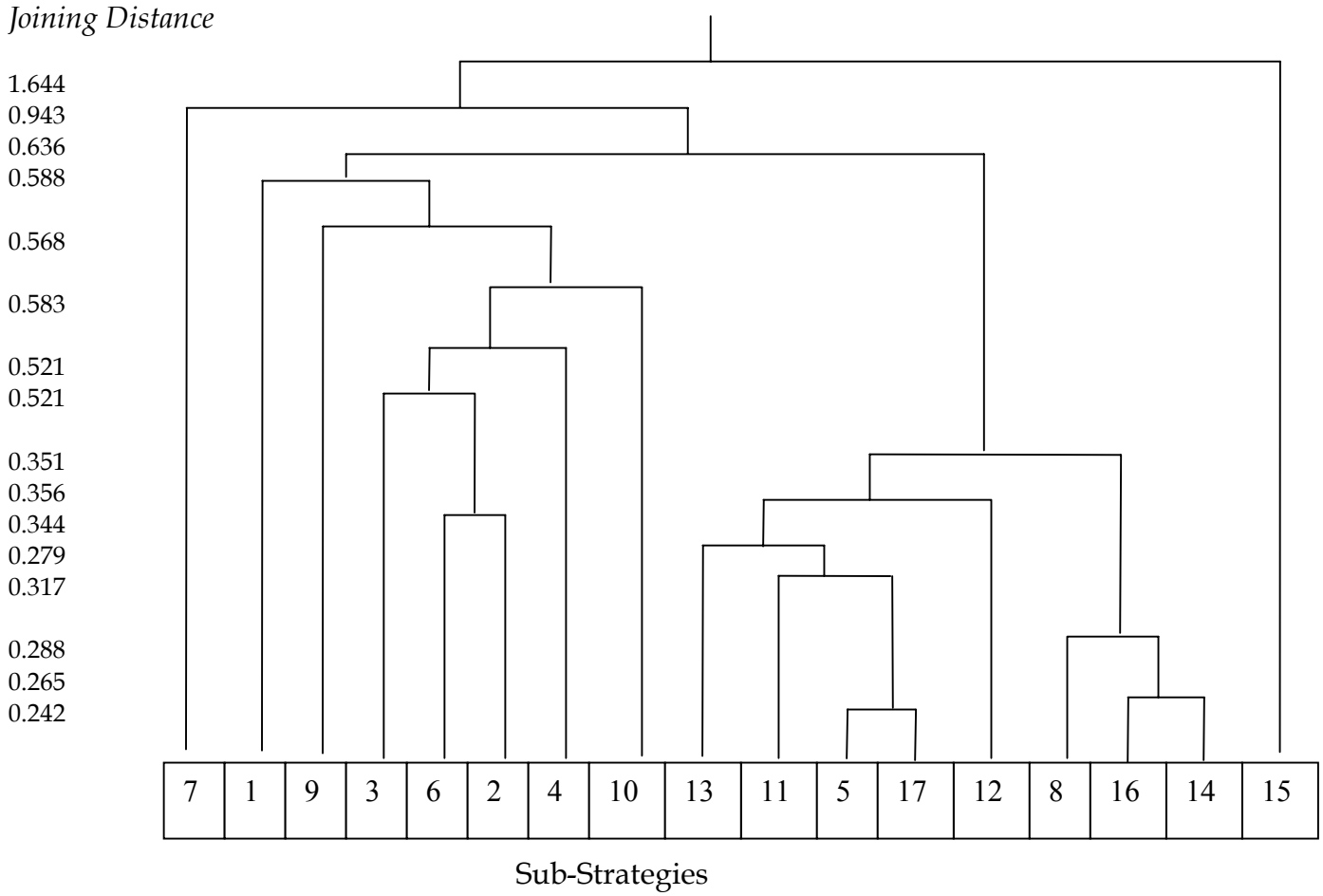
The mean participant group scores averaged over all groups are shown on Figure 2. Sub-strategies 1-3, 6-8, 9 &10 and 15 all scored an average of over 1.5, sub-strategy 4 was a little lower, and the rest all scored well below 1.

Figure 2. Mean Sub-strategy Scores for Ecologically Sustainable Fishing and Aquaculture



To determine the differences between the views given by groups of participants of the relative importance of each sub-strategy, the participant group means for all sub-strategies were analysed by the Systat statistical package, using the subroutine “Join”. This subroutine produced hierarchical clusters of sub-strategies, based on the similarities in the scores that they received from the participant groups. These similarities are displayed in a "tree" form, sub-strategies with similar scores joining each other lower on the tree, than those that were less similar. This analytical approach allows groups of sub strategies to be identified that may have been viewed as of similar importance by the participant groups, but individual groups need not all have had the same views as to their importance. So a cluster could have been formed of sub-strategies which may have scored highly by three of the participant groups, and lowly by the other 3 participant groups.
So the clustering approach allows group of sub-strategies s to be identified in which the participant groups may have had different, but consistent views about their importance. The results of the classification are given in Figure 3. The normalized Euclidian distance measure was used as a distance measure, and the centroid linkage, which uses the average distance of all objects in a cluster as the reference point to distances to other objects (or clusters) was used as a cluster amalgamation method. Because of the nature of these algorithms, the clustering level need not always have a higher value than that of preceding clusters as the hierarchical tree is formed).

Figure 3. Hierarchical tree of Similarities in Sub-Strategy Scores by Participant Groups for Strategy 1-Ecologically Sustainable Fishing and Aquaculture



Although any interpretation of these types of classification is difficult, the tree suggests that there were two major clusters of sub-strategies, which all groups of participants differentiated between in their scoring. One group (sub-strategies 5, 8,11-14, 16,17) were considered to be less important by all participant groups, most being given scores of less than 1, only 5 out of 42 mean scores for all these sub-strategies from all participant groups were above 1, the highest being 1.7. The other cluster (sub-strategies 2-4, 6, 10) were considered to be more important, only 2 out of 30 mean scores were below 1, both of these came from participant group 1.

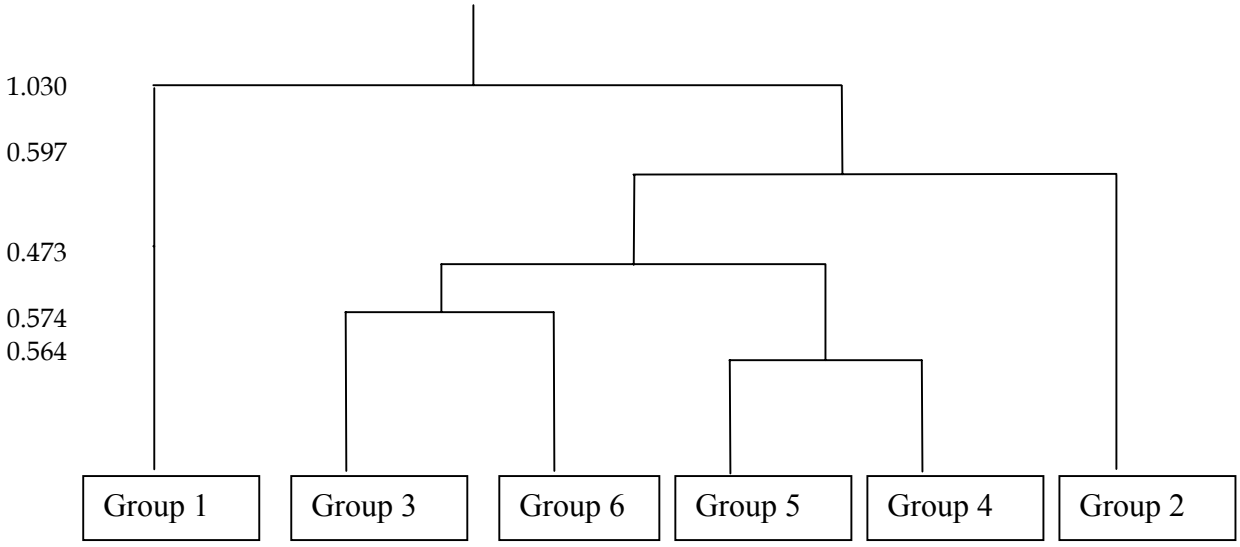
Four sub-strategies, 1,7,9 & 15 were all characterised by having high average scores, but dissimilar patterns of scores from either of the two above-mentioned clusters or each other. Sub strategy 1 was given a low score by participant group 6, sub strategy 7 was given an extremely high score by participant group 2, and sub strategy 9 was given a very high score by participant group 1. Sub strategy 15 was given an extremely high score by participant group 1 and an extremely low score by participant group 2.

If the differences between the respective mean scores given to all the sub-strategies by the 6 groups of participants are examined in the same way, the mean scores given to the sub-strategies by participant group 1 were very different from the rest, followed by participant group 2 (Figure 4).

These would appear to relate to participant group 1's preferences for sub-strategies that emphasised commercial aspects (9, *applying innovative practices that meet ESD*

requirements, and 15, *increase profitability for the commercial sector*). Whereas participant group 2 emphasised sub-strategy 7 (*environmentally friendly fishing and aquaculture practices*) and considered sub-strategy 15 (*increase profitability for the commercial sector*) relatively unimportant.

Figure 4 . Differences between Participant Groups in scoring Sub-Strategies for Strategy 1 - Ecologically Sustainable Fishing and Aquaculture



(c) The relative importance of the 7 sub-strategies of Smart Delivery

The seven sub-strategies identified to pursue *Smart Delivery*, together with the mean relative importance ascribed to them by groups of participants is given in Table 3.

Table 3. Smart Delivery sub-strategy scores

Sub strategy	G1	G2	G3	G5	G6	AV	s.d.
1. Assessing & responding to client and consumer preferences	4	2	3	2	1	2.2	0.97
2. Emphasising differentiated products	1.3	0	0	1	1	0.5	0.45
3. Extension of research results to fishing and aquaculture interests quickly & effectively	2.3	3	3	3	3	2.8	0.41
4. Utilising high levels of knowledge and skills within the sectors	0.5	2	2	2	1	1.3	0.55
5. Removing impediments to accessing key markets	0.8	1	1	0	0	0.5	0.19
6. Developing opportunities around fisheries-related products, services and knowledge	0.8	1	2	1	1	1.1	0.34
7. Marketing products and services on assessments of the ecological sustainability of fisheries	0.5	2	1	2	3	1.6	0.81

The mean scores of groups of participants averaged over all groups are shown on Figure 5. Sub-strategies 1 and 3 scored highest and 2 and 5 scored lowest and sub-strategies 4, 6 & 7 scored between them. As before, a hierarchical clustering analysis was performed, the results of which are shown in Figure 6.

Figure 5. Mean Sub-strategy scores for Smart Delivery

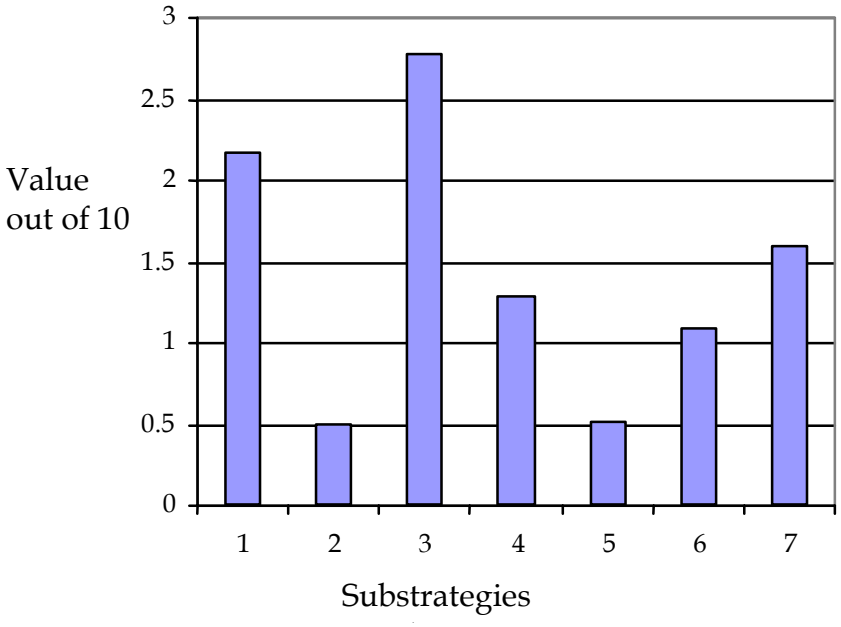
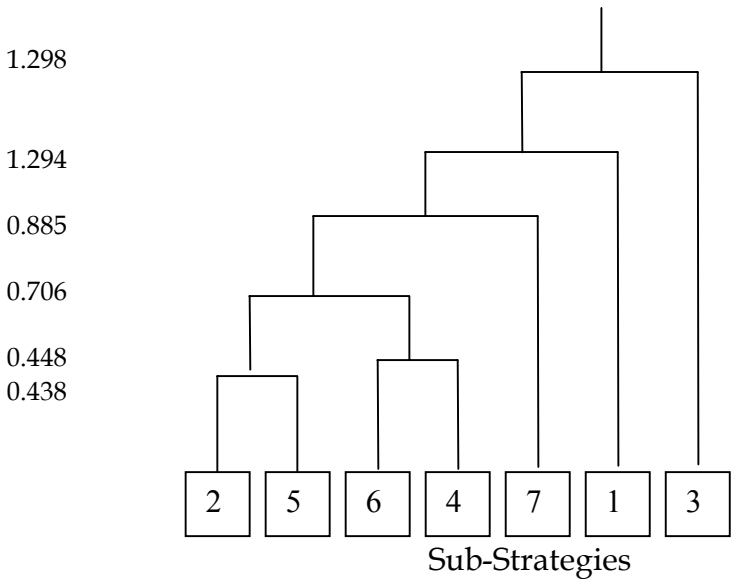


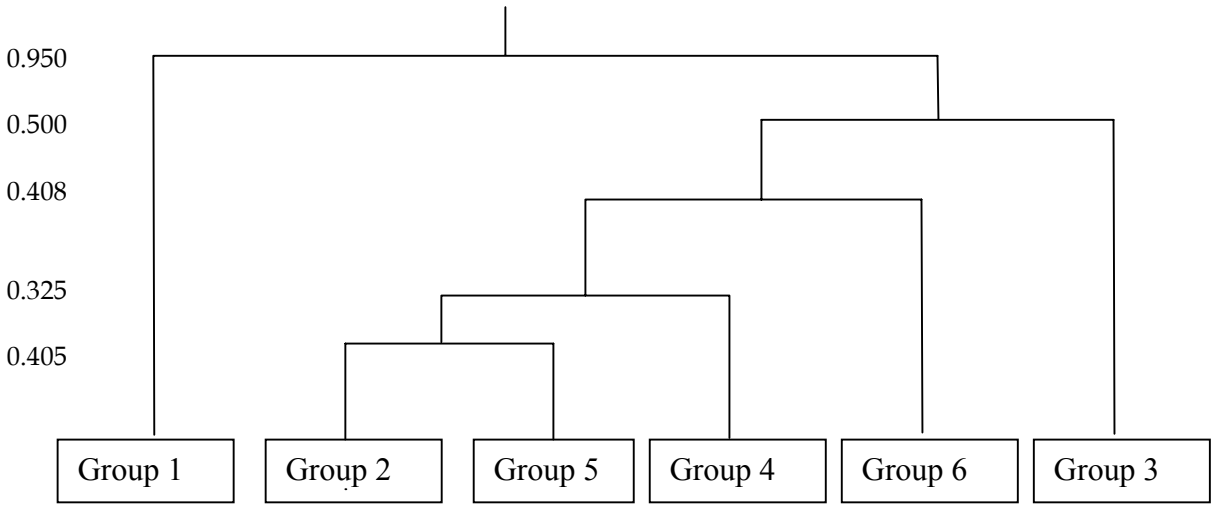
Figure 6. Hierarchical Tree of Similarities in Sub-Strategy Scores by Participant Groups for Strategy 2 - Smart Delivery



The two sub-strategies with the highest average scores (3, *Extension of Research Results to Fishing and Aquaculture Interests Quickly and Effectively* and 1, *Assessing & Responding to Client and Consumer Preferences*) were assessed as very different in importance from each

other and the rest of the other sub-strategies. The scores for sub-strategy 3 were uniformly high across all participant groups, the lowest score being 2.25 and the highest 3.4. However the mean scores for sub-strategy 1 were more variable across participant groups, in this case lying between 1.4 and 4.
The four lowest scoring sub-strategies (2, 4-6) showed similar patterns of scoring between the tables, all scores lying between 0.2 and 1.7. The remaining sub-strategy, 7 (*Marketing products and services on assessments of the ecological sustainability of fisheries*) was characterised by the high level of disagreement in its importance across participant groups. Here groups 1 & 3 scored this sub-strategy lowly as 0.5 and 0.8 respectively, while group 6 scored it highly at 2.7.
When the differences between the respective mean scores given to all the sub-strategies by the 6 groups of participants were examined in the same way as before, (Figure 7) the scores from participant group 1 were again very different from those of the other participant groups. This time they scored all sub-strategies other than the first three very low. This time participant group 3 was next most different from the rest. Group 3 shared group 1's low opinion of sub-strategy 7, but contrasted with that group by scoring sub-strategy 4 fairly highly.

Figure 7. Differences between Participant Groups in scoring Sub-Strategies for Strategy 2 - Smart Delivery



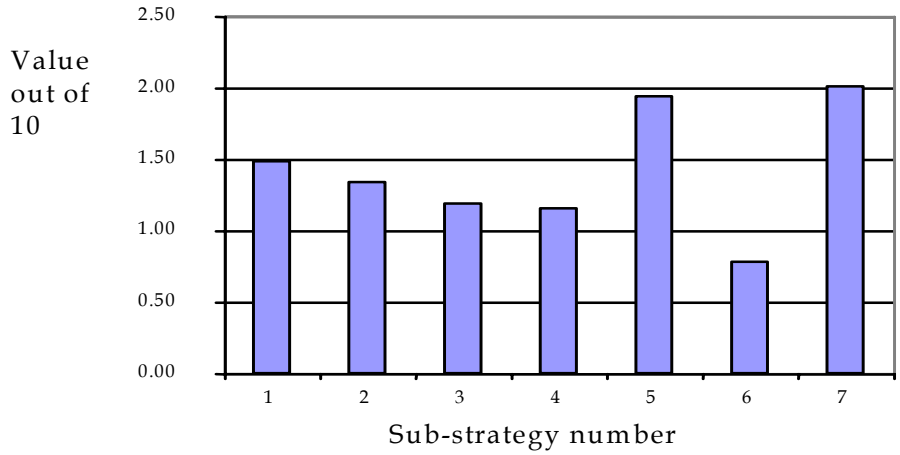
(d) The relative importance of the 7 sub-strategies of Cooperating to Deliver
The seven sub-strategies identified to pursue *Cooperating to Deliver*, together with the mean relative importance ascribed to them by groups of participants is given in Table 4.

Table 4. Cooperating to deliver sub-strategy scores

Sub-strategy	G1	G2	G3	G4	G5	G6	AV	s.d.
1. Leadership in developing a culture of ESD1	1.20	1.60	1.00	1.60	1.30	2.30	1.50	0.46
2. Building alliances and networks and working collaboratively	1.80	0.70	1.80	1.80	1.00	1.00	1.35	0.50
3. Being flexible and focussed	2.40	0.80	0.50	1.40	1.70	0.40	1.20	0.78
4. Managing relationships and communications well	0.80	1.20	0.70	1.80	1.00	1.50	1.17	0.42
5. Maximizing effectiveness of R&D through relevant structures & systems & reliable funding streams	2.00	1.50	2.80	1.20	2.00	2.30	1.96	0.57
6. Workable & equitable policy setting & associated legislation	0.60	0.80	0.70	0.80	1.30	0.60	0.80	0.26
7. Engagement of traditional owners and indigenous communities in cooperative management	1.20	3.40	2.50	1.40	1.70	1.90	2.02	0.81

The mean table scores averaged over all participant groups are shown on Figure 8.

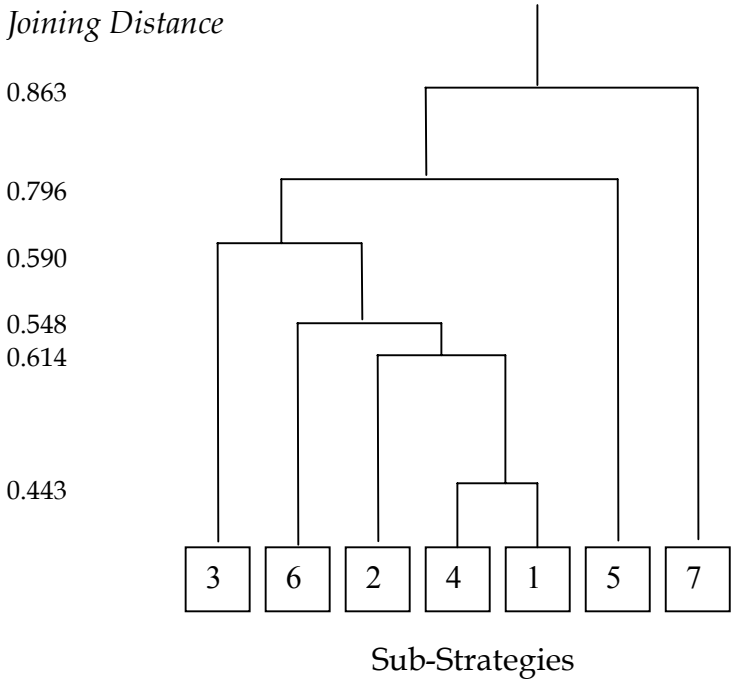
Figure 8. Mean Sub-strategy score for Co-operating to Deliver



Sub-strategies 5 (*Maximizing Effectiveness Of R&D Through Relevant Structures & Systems & Reliable Funding Streams*) and 7 (*Engagement Of Traditional Owners And Indigenous Communities In Cooperative Management*) were considered more important that the rest, both scoring around 2. All other sub-strategies had mean scores of less than 1.5, decreasing progressively from sub-strategy 1, 2, 3, 4 and then 6.

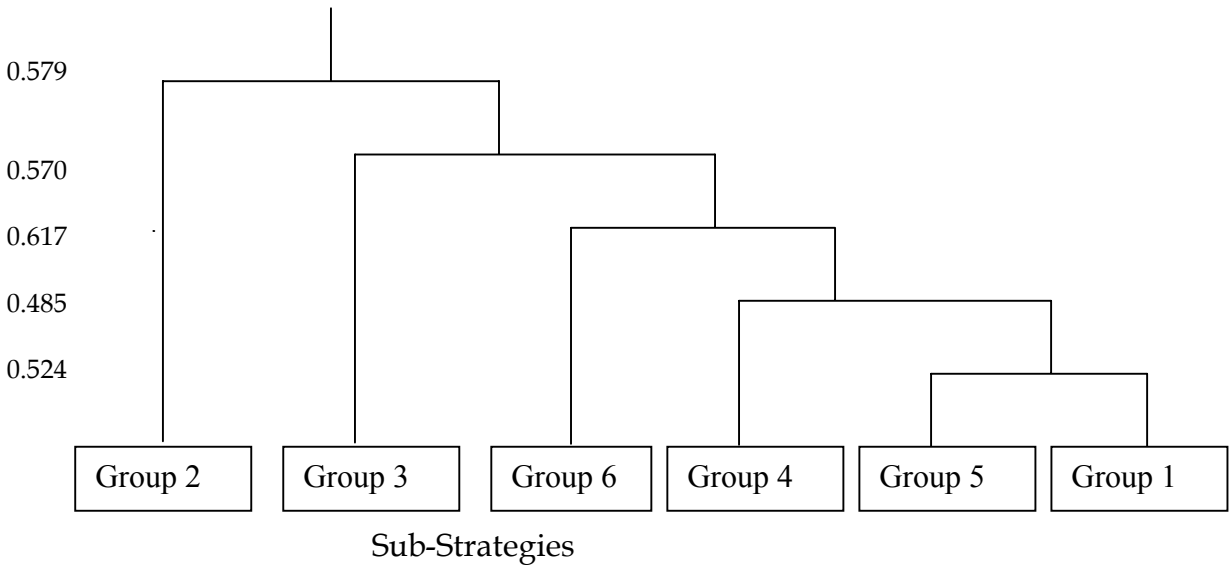
A hierarchical clustering analysis was performed again, the results of which are given in Figure 9. This analysis emphasised the differences between sub-strategies 5 and 7 and the other sub-strategies. Sub-strategy 7 was scored extremely highly by participant groups 2 and 3, and highly by all other groups except group 1 which gave it a medium score (1.2). Sub-strategy 5 was scored highly by all except group 4, which gave it a medium score.

Figure 9. Hierarchical Tree of Similarities in Sub-Strategy Scores by Participant Groups for Strategy 3- Cooperating to deliver



The hierarchical classification between the participant groups showed no clear clustering (Figure 10) each individual group of participants being added to the combined group sequentially. This type of result shows that unlike strategies 1 & 2, there was no clear scoring pattern of the importance of the sub-strategies that was shared by any of the participant groups.

Figure 10. Differences between Participant Groups in scoring Sub-strategies for Strategy 3 - Cooperating to Deliver



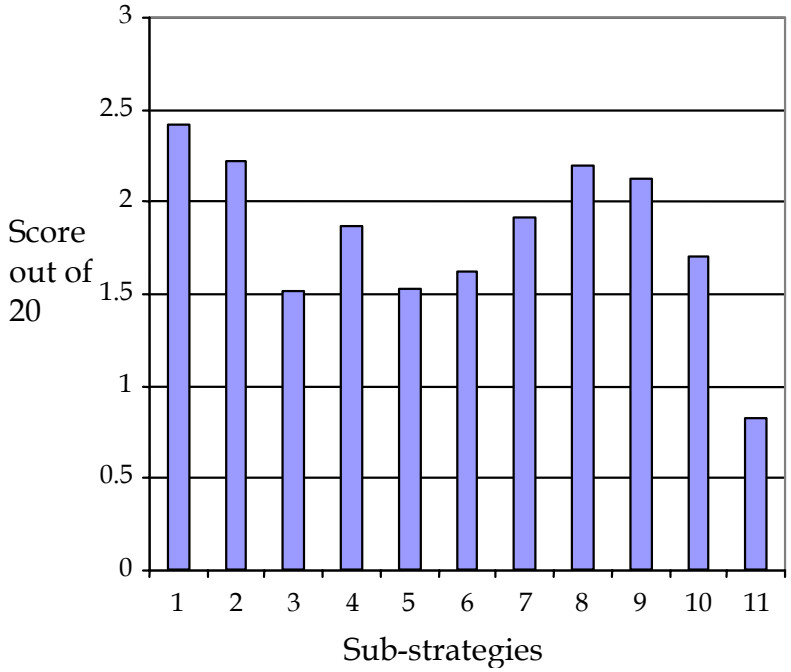
(e) The relative importance of the 11 sub-strategies of Managing Change in Fisheries
The seven sub-strategies identified to pursue *Managing Change in Fisheries*, together with the mean relative importance ascribed to them by groups of participants is given in Table 5.

Table 5. Managing Change in Fisheries Sub-strategy scores

Sub-strategy	G1	G2	G3	G4	G5	G6	AV	s.d.
1. Establish ecosystem-based approach to planning & management	2	2	1.4	3	2.7	4	2.4	0.77
2. Continuous improvement in ecologically sustainable criteria	2	2	1	3	2.7	3	2.2	0.66
3. Support the precautionary principle as the primary tool for change management	1	1	2.4	1	1.3	2	1.5	0.60
4. Establish objectively-based allocation of resources	1	1	1.6	3	2.9	1	1.9	0.83
5. Create more flexible government policy processes to speed up decision-making	3	1	1.6	1	1.4	1	1.5	0.61
6. Provide better information on fishing & the environment	1	2	2.8	1	1.5	2	1.6	0.63
7. Build educational & consultative processes to engage community involvement in fisheries	1	1	2.6	2	2.5	2	1.9	0.58
8. Incorporate global change drivers such as climate change, population dynamics & energy resources into fisheries management	2	4	0.6	2	1.5	3	2.2	1.22
9. Integrate indigenous aspirations into decision-making process	4	2	2	2	1.7	2	2.1	0.72
10. Develop the capacity and use the knowledge and skills of fishing and aquaculture interests	2	2	1.8	2	1.5	2	1.7	0.14
11. Earn community confidence as responsible managers	1	1	2.2	0	0.4	0	0.8	0.87

The differences in the mean sub-strategy scores across all groups of participants are given in Figure 11.

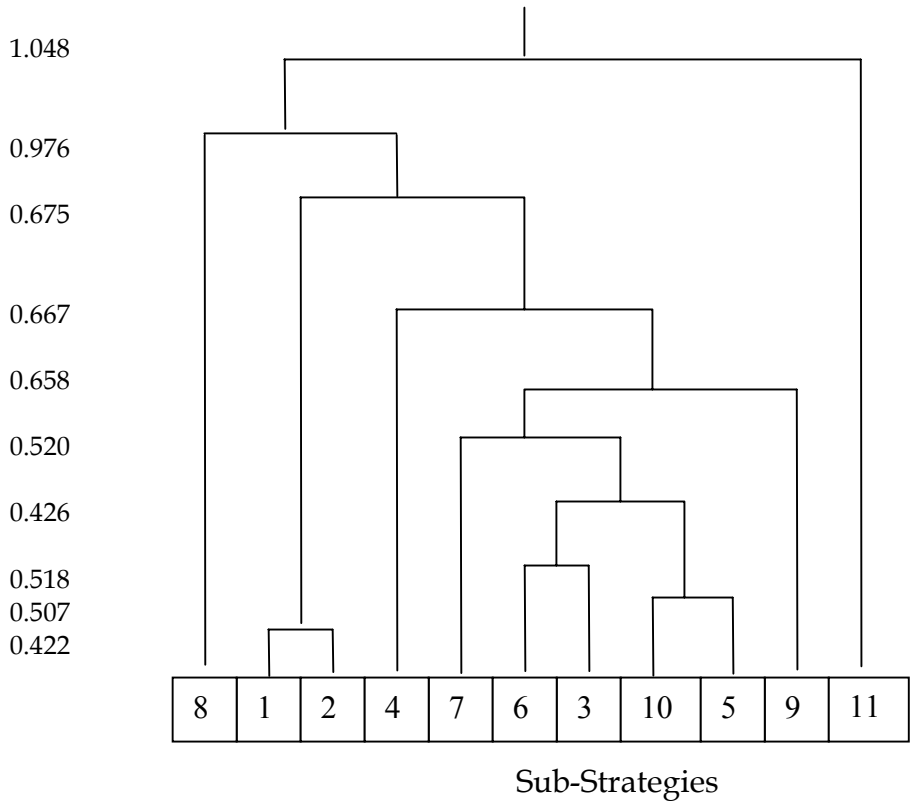
Figure 11. Mean Sub-strategy Scores for Managing Change in Fisheries



Mean group scores for sub-strategies 1, 2, 8 & 9 were all over 2, while sub-strategies 3-7 all scored between 1.5 and 2 and sub-strategy 11 (*Earn community confidence as responsible managers*) was considered to be least important, being scored 1. This low score was a result of from participant groups 4 and 6 giving it no score at all, and group 5 giving it only 0.4. Group 3 gave it a high score of 2.2.

Hierarchical classification of the group scores (Figure 12) also separated sub-strategy 11 apart from the rest, followed by sub-strategy 8 (*Incorporate global change drivers such as climate change, population dynamics & energy resources into fisheries management)*. In the case of 8 however, the separation appeared to have been achieved by an extremely high score of 4.2 from participant group 2, and a low score of 0.6 from group 3. The rest of the groups scored this sub-strategy between 1.5 and 2.8.

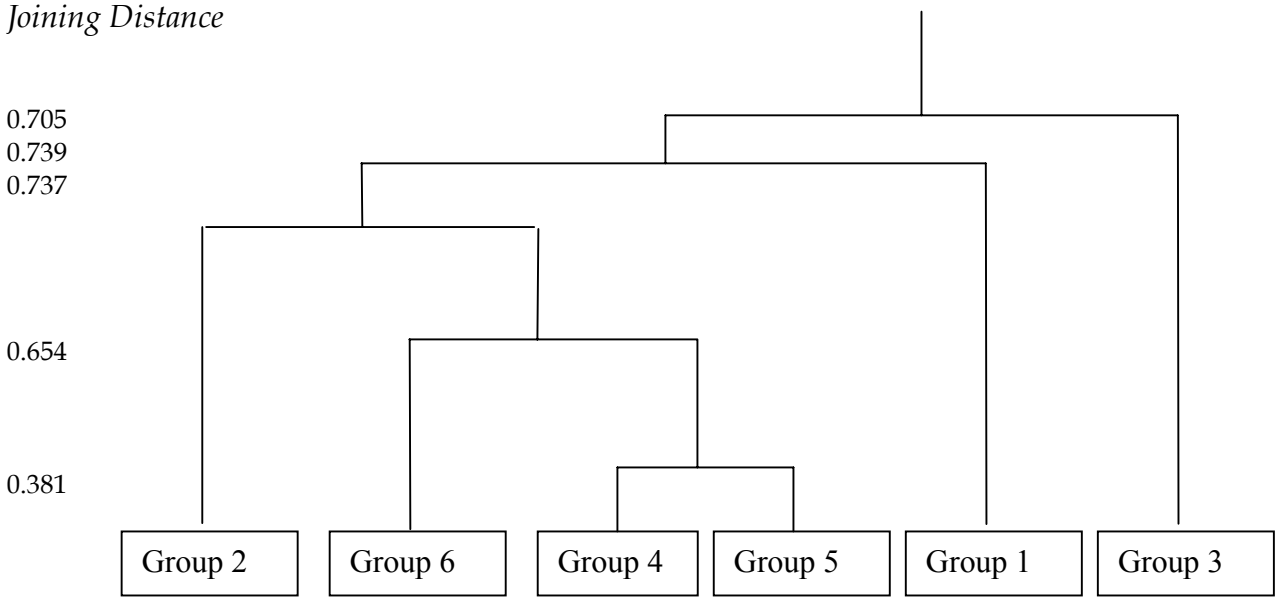
Figure 12. Hierarchical Tree of Similarities in Sub-Strategy Scores by Participant Groups for Strategy 4- Managing Change in Fisheries



Sub-strategies 1 (*Establish ecosystem-based approach to planning and management*), and & 2 (*Continuous improvement in ecologically sustainable criteria*) had very similar patterns of scoring and were themselves very different from the other sub-strategies in their scores, achieving the highest 2 means of participant group scores (Figure 11). Four sub-strategies (3, 5, 6, 10) were all similar in that they scored at a medium level across most groups. Sub-strategy 4 was differentiated at a high level from a group of similarly valued sub-strategies (3, 5, 6, 7, 9, 10). Two participant groups scored this highly.

A hierarchical classificatory tree of the patterns of scoring across the sub-strategies by the participant groups showed (Figure 13) that groups 4 and 5 were similar in their scoring patterns but the other tables varied considerably between each other.

Figure 13. Differences between Participant Groups in scoring Sub-Strategies for Strategy 4. Managing Change in Fisheries



CONCLUSIONS

Although there was considerable variability between scores of the participants for the various sub-strategies, which also showed in the mean participant group scores, there were clear preferences demonstrated in which there was a large degree of consensus regarding the most important strategies and sub-strategies for R&D in Queensland.

The *Ecologically Sustainable Fishing and Aquaculture* strategy was generally considered to be twice as important as the other three strategies. There was also general agreement by all but one participant group that *Managing Change in Fisheries* was the next most important, followed by *Smart Delivery* and *Cooperating to Deliver*, which were considered to be about equal in importance.

Ecologically Sustainable Fishing and Aquaculture.

Of the 17 sub-strategies evaluated, eight were generally agreed to be of lowest importance for this strategy and may be considered to be relatively unimportant for prioritising R&D. Of the rest:

- 2- *Partnerships To Improve Land/Water Relationships*
- 3- *Support Ecosystem-Based Planning And Management*
- 4- *Applying Precautionary Management Tools*
- 6- *Investing In Appropriate Research, Monitoring And Independent Auditing*
- 10- *Improving Waste Utilisation*

were considered to be important by most of the participant groups.

The four other sub-strategies with high average table scores:

- 1- *Ethos And Commitment To ESD*
- 7- *Developing Environmentally Friendly Fishing Practices*
- 9- *Applying Innovative Practices That Meet ESD Requirements*
- 15- *Increase Profitability For The Commercial Sectors*

had more variability, most being given extremely high or extremely low scores by individual tables. These sub-strategies could be considered to be the ones in which divergent views are held most strongly by the various Fishing and Aquaculture sectors.

Managing Change in Fisheries

This was the second most important strategy for R&D. Of the 11 sub-strategies evaluated, one stood out on the basis of consistently low score (11- *Earn Community Confidence as Responsible Managers*). Two strategies stood out by achieving the high mean scores from all groups of participants, these were:

- 1- *Establish Ecosystem-Based Approach To Planning And Management*
- 2- *Continuous Improvement In Ecologically Sustainable Criteria*

Smart Delivery

Two sub-strategies stood apart from the rest as most important these were, in order of importance:

- 3- *Extension Of Research Results To Fishing and Aquaculture Interests Quickly And Effectively*
- 1- *Assessing and Responding To Client And Consumer Preferences*

Cooperating to deliver

Two sub-strategies also stood out from the rest in this case. They were:

- 5- *Maximizing The Effectiveness of R&D through Relevant Structures & Systems & Reliable Funding Streams*
- 7-*Engagement of Traditional Owners and Indigenous Communities in Cooperative Management*.

Appendix 1

Names and Affiliations of Workshop Participants (Townsville, 30 August 2001)

Surname	First name	Affiliation
Anderson	Trevor	JCU
Anderson	Ian	DPI
Battershill	Chris	AIMS
Begg	Gavin	Reef CRC
Bell	Trish	JCU
Bowater	Rachael	DPI
Cappo	Mike	AIMS
Doherty	Peter	AIMS
Gillespie	Jim	DPI
Gribble	Neil	DPI
Grieve	Paul	DPI
Grimley	Bob	DPI
Hall	Michael	AIMS
Huber	Dorothea	GBRMPA
Jones	Clive	DPI
Kenway	Matt	AIMS
Lukacs	George	JCU
Mapstone	Bruce	JCU
McKinnon	David	AIMS
Moody	Nick	DPI
Morgan	Steve	Sunfish
Pearson	Bob	DPI
Peterson	Eric	JCU
Poiner	Ian	CSIRO/FRDC Subprogram
Reichelt	Russell	FRDC/Reef CRC
Smuth	Kevin	Aquaculture Industry
Thomas	Annette	DPI
Tobin	Andrew	Reef CRC
Veitch	Vern	Sunfish
Williams	Ashley	Reef CRC
Wilson	Kate	AIMS
Wilson	John	FRDC
Winkel	Craig	Seafood marketing industry
Young	Carl	Aquaculture Industry
Young	Peter	QFIRAC
Zeng	Chaoshu	JCU
Zethoven	Imogen	WWF/QCC

Appendix 2

Names and Affiliations of Workshop Participants (Brisbane, 26 October 2001)

Surname	First name	Affiliation
Anderson	Leonie	CQU
Bartley	Rob	AAQ
Bateman	Dave	Sunfish
Breen	Martin	APFA
Campbell	Harry	UQ
Counihan	Regina	UQ/EPA/Coastal CRC
Courtney	Tony	DPI
Degnan	Bernie	UQ
Duncan	Peter	USC
Elizur	Abigail	DPI
Gillespie	Jim	DPI
Hoyle	Simon	DPI
Huber	Dorothea	GBRMPA
Keast	Bill	ACQ
Kirkwood	John	DPI
Kowitz	Les	FFSAQ
Lester	Bob	UQ
Lucas	Tim	UQ
McPhee	Daryl	WBM Oceanics
Neller	Ron	U.of the Sunshine Coast
O'Brien	Liz	DPI
Ovenden	Jenny	DPI
Paterson	Brian	DPI
Pearson	Bob	DPI
Pitcher	Roland	CSIRO
Playford	Julia	EPA
Potter	Mike	DPI
Preston	Nigel	CSIRO
Robins	Julie	DPI
Ryan	Shannon	GU/AMCS
Shaw	Roger	Coastal CRC
Souter	Duncan	QSIA
Staunton-Smith	Jonathon	DPI
Stock	Errol	AMCS
Sumpton	Wayne	DPI
Swindlehurst	Rob	DPI
Thrower	Stephen	DPI
Walker	Peter	CSIRO
Warburton	Kev	UQ
Williams	Kev	CSIRO
Wilson	John	FRDC
Young	Carl	Aqua industry
Young	Peter	QFIRAC
Zethoven	Imogen	WWF/QCC

Appendix 3

Names and Affiliations of Workshop Participants (Brisbane, 26 November 2001)

Name	Affiliation	Name	Affiliation
Alvey, Bruce	Queensland Ind of Rec Fishers	Jackson, Peter	Fisheries @ Aquaculture Dev QFS
Appleton, Pat	Impact Consulting Qld Pty. Ltd	Kowitz, Les	Freshwater Stocking Assn
Beumer, John	Marine Fish Habitat, QFS	Lavarch, Lynda	Chairman, FIDC
Bishop, Colin	General Manager, QFS	McCasker, Jane	Executive Assistant QFS
Breen, Martin	Australian Prawn Farmers Assn	Mitchell, Dave	Chairman, CrabMAC
Cadwallader, Phil	GBRMPA	O'Brien, Chris	Chief Technical Officer, Ministry of Fisheries, New Zealand
Doohan, John	Chairman, Sunfish	Pearson, Bob	Secretary QFIRAC
Dredge, Mike	Southern Fisheries Centre, DPI	Plowman, Ian	Facilitator, DPI
Fisher, John	Commercial Fisher	Potter, Mike	Southern Fisheries Centre DPI
Fisher, Melanie	Bureau of Rural Sciences, AFFA	Ruello, Nick	Ruello and Associates
Fogarty, Jim	President, Qld Lobster Assn	Sampson, Kirsty	Qld Coordinator Marine and Coastal Community Network
George Lukacs	James Cook University Freshwater	Snow, Alan	Centre for Food Technology DPI
George, Melissa		Souter, Duncan	Queensland Seafood Industry
Gillespie, Jim	General Manager, QFS	Tarte, Diane	National Coordinator, Marine & Coastal Community Network
Greenhalgh, Cliff	Commercial Fisher	Williams, Kevin	CSIRO
Harris, Jane	FRDC	Young, Carl	Aquaculture
Hone, Patrick	FRDC	Young, Peter	Chairman QFIRAC
Huber. Dorothea	GBRMPA	Zethoven, Imogen	World Wide Fund for Nature

Appendix 4

Matrix showing the relationship between QFIRAC's key R&D areas and the priorities of FRDC and FIDC

QFIRAC key R&D area	FRDC Program			FIDC Strategy			
	Program 1 Natural Resources Sustainability	Program 2 Industry Development	Program 3 Human Capital Development	Strategy 1 Ecologically sustainable fishing	Strategy 2 Managing change in fisheries	Strategy 3 Smart delivery	Strategy 4 Co-operating to deliver
Socio-economic assessments	✓	✓		✓			
Sustainability assessments	✓			✓	✓		
Effects of fishing/cleaner production	✓			✓			
Aquaculture production efficiency		✓					
Value-adding		✓		✓			
Non-fishing impacts on fisheries resources	✓			✓			✓
Skills development			✓			✓	

Appendix 5

Development of QFIRAC's R&D Strategic Plan and Priorities: Interviews with Key Stakeholders

Peter Young & Bob Pearson, March 2002

Background

The following few paragraphs outline the steps QFIRAC has taken to develop its Strategic R&D Plan and Priorities for public release to R&D providers by the end of May 2002.

In the second half of last year QFIRAC conducted two one-day workshops with R&D providers and user group representatives Townsville and Brisbane to discuss R&D priorities and QFIRAC's processes.

QFIRAC conducted a FRDC-funded workshop on 26 November 2001. This involved key stakeholders considering R&D priorities in the context of the 10 year strategic vision of the Fishing Industry Development Council (FIDC). A report on the outcomes of that workshop has been produced and distributed to all participants and to FIDC members (*QFIRAC Research and Development Workshop – 26/11/01* by Peter C. Young).

QFIRAC met on 1 February 2002 to consider these workshop findings and to decide on further steps in the process of developing its Strategic Plan.

It was agreed that QFIRAC should interview representatives of the fishery Management Advisory Committees (MACs) and other key stakeholder sectors (commercial and recreational fishing, aquaculture, seafood marketing, indigenous, conservation). The purpose of these interviews was to discuss their existing R&D priorities and identify what were a few key (or higher level) areas of research above the research project level. Before the interviews all stakeholder sectors were asked to list their existing R&D priorities and fit them in the most appropriate cells of a matrix. The matrix consisted of the Programs and Strategies of the Fisheries Research & Development Corporation (FRDC) and those FIDC Strategies and Substrategies that were identified by the 26 November workshop participants as relating to R&D.

These interviews were conducted by QFIRAC on 5th and 6th March at the Primary Industries Building in Brisbane. QFIRAC members to participate were Peter Young (Independent Chair), Jim Gillespie (DPI), Dorothea Huber (GBRMPA) and Bob Pearson (DPI and Secretary). Duncan Souter (QSIA) sat in on several interviews.

The appendix lists the stakeholders who were interviewed.

Outcomes of stakeholder interviews.

"Key areas" of research identified are as follows:

Stakeholder group	**Key Research Area**
Freshwater MAC,	1. Socio-economic assessments of fisheries 2. Restocking of important species or species in decline 3. Habitat impacts on fisheries 4. Biological criteria for fisheries management of important species or species in decline 5. Noxious and pest fish and their control
Trawl MAC	1. By-catch reduction - quantification and reduction 2. Benthic impacts of trawling - quantification and reduction 3. Sustainability assessments of permitted species 4. Bio-economic assessments of the state of the fishery and the implications of management actions
GBRMPA	1. Physical impacts of fishing on habitat 2. Sustainability assessments of the state of the fishery (including by-catch species, permitted species and target species) and implications of management actions 3. Environmental effects of land-based activities on near-shore fisheries habitats 4. Socio-economic assessments of all fisheries in the World Heritage Area
Crab MAC	1. Refining the procedures for estimating and setting the TAC for spanner crabs 2. Recruitment variability of stocks and effects of environmental variability. 3. Impacts of coastal zone development on mud crab stocks 4. Defining resource sharing between and within fishery sectors
Finfish MAC	1. Development of innovative approaches for sustainability indicators for data poor fisheries 2. Management strategy evaluation (MSE) especially with respect to: • Spatial closures • Catch sharing • Sustainability indicators • Socio-economic aspects 3. Threatened and vulnerable species: the identification of species being caught, their location, relative vulnerability and abatement measures to ensure their sustainability

Stakeholder group	Key Research Area
Gulf MAC	1. Threatened and vulnerable species: the identification of species being caught, their location, relative vulnerability and abatement measures to ensure their sustainability 2. Stock assessment of grey mackerel. 3. Development of innovative approaches for sustainability indicators for data poor fisheries particularly those in remote areas and/or involving indigenous fishers
Seafood Marketing	1. Socio-economic assessment of fisheries: community benefits arising from changes in fisheries management. 2. Food safety and hygiene training 3. Stock enhancement (improving reliability of supply eg scallop enhancement)
Aquaculture	1. Water management, treatment and efficient use/reuse 2. Genetics to improve productivity of stocks 3. Fish health R&D capacity 4. Feeds & nutrition for larvae
Sunfish	1. Socio-economic assessment of fisheries, particularly the value of recreational fishing and impacts of fisheries management 2. Management strategy evaluation (MSE) especially with respect to: • fish stocking and survival of released fish • resource sharing 3. Sustainability indicators for key recreational species such as mackerel & snapper 4. Impacts on fish stocks of habitat changes, climate change and pollution 5. Skills development for: • voluntary organisations involved in MACs • improving the effectiveness of MACs

Stakeholder group	Key Research Area
Reef MAC	1. Discard mortality 2. Development of innovative approaches for sustainability indicators for data poor fisheries particularly spanish mackerel, tropical rock lobsters, most line caught species and deepwater species 3. Improve and validate estimates of effective effort in the commercial and recreational sectors. 4. Management strategy evaluation (MSE) especially with respect to: • Primary management measures • Marine protected areas for the rocky reef fishery
QSIA	1. Mitigation of impacts of trawling 2. Sustainability levels for all target species in the net, line, trawl and crab fisheries 3. Quantifying the economic impacts of habitat changes on fisheries 4. Socio-economic assessments of management changes/options 5. Innovative approaches to increasing the value of fisheries resources
AFFS (Fisheries & Aquaculture	1. Developing innovative stock assessment methodologies, particularly for data poor fisheries 2. More effective operation of the SAGs in identification of R&D priorities 3. Whole of systems approach to fisheries and aquaculture R&D eg effects of climate on fisheries 4. Genetic improvement of aquaculture stocks 5. Aquaculture waste water management
Harvest MAC	1. Development of innovative approaches for sustainability indicators for data poor fisheries, particularly tropical rock lobsters

Appendix

List of stakeholders interviewed

Tuesday 5th March, 3rd Floor Conference Room PIB, 80 Ann Street

1. Freshwater MAC – Peter Jackson (QFS), Michael Hutchison (AFFS (F&A)), Les Kowitz (FFSAQ)
2. Trawl MAC - Wez Norris (QFS), Tony Courtney (AFFS (F&A))
3. GBRMPA – Dorothea Huber (GBRMPA)
4. Crab MAC – Shane Hansford and Mark Doohan (QFS), Ian Brown (AFFS (F&A))
5. Finfish MAC – Malcolm Dunning, Mark Doohan & Shane Hansford (QFS)
6. Gulf MAC - Shane Hansford and Mark Doohan (QFS)
7. Seafood Marketers – Martin Perkins (QSMA)

Wednesday 6th March, 3rd Floor Conference Room PIB, 80 Ann Street

1. Aquaculture – Graham Dalton and Carl Young
2. Sunfish – John Doohan and Steve Morgan (Sunfish)
3. Reef MAC – Mark Elmer (QFS) and Ian Brown (AFFS (F&A))
4. QSIA – Duncan Souter (QSIA)
5. AFFS (Fisheries & Aquaculture) – Paul Grieve & Mike Potter
6. Harvest MAC – Mark Elmer, Anna Weis, Phil Gaffney (QFS)

Appendix 6

QUEENSLAND FISHING INDUSTRY RESEARCH ADVISORY COMMITTEE

Strategic Research and Development Plan: 2002-2006

May 2002

Supported by:

Fisheries Research and Development Corporation

Department of Primary Industries

Strategic Research and Development Plan: 2002-2006

1. Introduction

The Queensland Fishing Industry Research Advisory Committee (QFIRAC) advises the peak fisheries policy body in Queensland – the Fishing Industry Development Council (FIDC) and the main funder of fisheries research and development (R&D) in Australia – the Fisheries Research and Development Corporation (FRDC).

The committee has an independent Chair, currently Dr Peter Young, who also fills the role of independent scientist on the Committee. Members are nominated for a 3-year term by the peak stakeholder sectors – resource management agencies (Department of Primary Industries (DPI) and Great Barrier Reef Marine Park Authority (GBRMPA)), industry peak bodies (Queensland Seafood Industry Association (QSIA), Sunfish, Queensland Seafood Marketers Association (QSMA) and Queensland Aquaculture Industry Council (QAIC)), and conservation sector (Queensland Conservation Council (QCC)). The current members of QFIRAC are listed in **Appendix 1**.

The FRDC provides funding to support the Committee's operations including remuneration for the Chair. FRDC provides additional funding for the Committee to review and update its strategic plan every two years. The development of this R&D Plan would not have been possible without funding provided by FRDC (FRDC project 2001/316).

QFIRAC has developed this research and development plan to ensure R&D providers target the high priority research needs of the industry sectors, fisheries resource managers and other stakeholders.

In this R&D Plan the Committee has identified, in consultation with stakeholders, what it believes are the key knowledge gaps where R&D is needed to advance the sustainable development of the fishing industry in Queensland.

The Plan should be viewed as an evolving document, with modifications being made each year following consultations with stakeholders.

2. The Queensland Fishing Industry

Queensland's fisheries resources are one of the most highly valued and prized resources of the State, supporting a wide range of activities and providing social, economic and regional development benefits to the whole community.

A few points regarding the importance of Queensland's fisheries resources to a range of different sectors of the community are:

- The wholesale value of commercial fisheries production in Queensland is approximately $340 million with over 2,400 licensed fishing operations in the catching sector directly employing over 7,000 workers. The retail value of Queensland

commercial fisheries harvest is estimated at in excess of $700 million, with over 15,000 people employed in seafood processing and businesses associated with commercial fishing.

- Aquaculture production in Queensland has reached $55 million, comprising a wide range of species though principally focussed on prawn production. Investment in this industry continues to increase rapidly.
- Over 850,000 Queenslanders engage in recreational fishing throughout the entire Queensland coastline and through most inland waterways.
- Expenditure by recreational and commercial fishers contributes significantly to regional economies.
- Fisheries resources are tied inextricably to the culture and history of Aboriginal and Torres Strait Islander groups, whose interests are to see that this significance is recognised and protected for the future.

3. Background to the development of the R&D Plan

QFIRAC developed and published its first R&D Strategic Plan in 1996, following a successful funding application to the FRDC (FRDC project 1993/252). The resulting 10-year plan (*Queensland Fisheries Research and Development Strategy (1995-2005)*) was developed over a series of workshops that involved all key stakeholders in late 1995. This plan was updated in 1997 following another workshop of key stakeholders. This update (*QFIRAC R&D priorities Short term priority areas (1998-2000*)) was released in June 1998. Since then, major changes have occurred in Queensland's fisheries that include:

- The decision by DPI and its major industry stakeholders to embark on a process of futuring to identify a vision for the industry in the year 2010, and what strategies would be needed to achieve that vision. This process, which was part-funded by FRDC, included an examination of the R&D strategies that would be needed to achieve the vision.
- Fisheries management and R&D has been restructured within DPI in mid-2000 by amalgamation of the Queensland Fisheries Management Authority (QFMA) with the DPI's Fisheries Group to form the Queensland Fisheries Service (QFS), and the transfer of R&D staff to a separate R&D Business Group in DPI known as the Agency for Food & Fibre Sciences (AFFS).
- State Cabinet decided that the newly reconstituted peak fisheries policy body, the FIDC would have as one of its tasks, the identification of strategic R&D priorities for the industry. QFIRAC, as part of its mandate, reports to FIDC on R&D matters, and would be expected to play a major role in this identification of priorities.
- From July 2000 to mid-2001 the QFMA's Management Advisory Committees (MACs) were put in abeyance following the amalgamation of the QFMA with the DPI. These MACs had previously provided advice on the R&D priorities of each fishery. During this time there has been no government based process in place that identifies R&D priorities for the fisheries.

Because of these changes, QFIRAC, which had previously commenced a review of R&D priorities, was unable to reformulate its strategic plan for R&D in Queensland for the 2002/03 funding round. Instead, a list of key priorities were identified in May 2001 prior to the call for preliminary proposals in June.

This present plan takes into account these changes and provides guidance to R&D providers about the priorities for fisheries R&D in Queensland.

The production of the plan involved:

- the development and publication of a document for R&D in Queensland that identifies current R&D priorities and describes a process for continuous improvement in the identification of change in R&D priorities and communication between stakeholders.
- the development and adoption of an operating process for QFIRAC that will enhance its interaction with all research providers in Queensland, and maximise the outcomes of each dollar spent on R&D.

4. About QFIRAC

What is QFIRAC

The Committee was established in June 1996, following a major review of its predecessor of the same name which had operated since 1985.

The Committee's current terms of reference, which have been endorsed by FIDC, are:

- *To determine R&D priorities for Queensland fisheries, regularly update the Queensland Fisheries R&D Strategy and ensure that the Strategy is readily available to stakeholders.*
- *To annually consider and prioritise R&D project proposals submitted by all research providers, advise funding bodies such as the Fisheries Research and Development Corporation of these priorities and provide feedback to researchers on decisions.*
- *To be proactive in brokering the development of R&D projects, including collaborative projects that address strategic priorities.*
- *To report annually to Queensland Fishing Industry Development Council, and all stakeholders on fisheries R&D activities in Queensland.*

QFIRAC's relationship with FRDC

Fisheries Research Advisory Bodies (FRABs) in each State and the Commonwealth advise the FRDC on the appropriateness and priority of R&D. All FRABs receive funding support from FRDC, not only to facilitate their normal operations but also to assist in the development of their strategic plans. QFIRAC performs the role of the FRAB in Queensland. DPI provides secretarial support to QFIRAC.

QFIRAC's main role is to provide advice to FRDC on its assessment of:

- preliminary research proposals and draft FRDC applications submitted to it by researchers
- summaries of final FRDC applications that have been submitted to FRDC for funding

Refer to FRDC's website for more information on the role of FRABs in FRDC's funding process: **www.frdc.com.au**

QFIRAC's relationship with FIDC

FIDC is the peak policy setting body of all key stakeholders in fisheries and aquaculture in Queensland. FIDC reports to the Minister for Primary Industries and Rural

Communities. QFIRAC is a subcommittee of FIDC. The QFIRAC chair reports on the Committee's activities to every meeting of FIDC (about four per year). In the development of its latest R&D Plan QFIRAC has given consideration to FIDC's recent strategic planning initiative. FIDC has completed a strategic futuring project (FRDC project 1999/354) in which a common vision for the future of fisheries in Queensland was agreed by the process of "foresighting". This vision has been published in the pamphlet "Pathway to the future 2001-2010, Queensland fishing sector interests, building *smart futures* for fisheries". The results of this project are especially significant as they represent a consensus across all significant stakeholders, of the type of future they all agreed they wanted for all the sectors involved.

Endorsement of this Plan will be sought from FIDC.

QFIRAC's relationship with stakeholders

The stakeholders that QFIRAC works with are listed in Tables 2 and 3. They include the main users of fisheries R&D – in particular the Management Advisory Committees (MACs) of the major Queensland fisheries which report to QFS, and the peak industry bodies for the commercial fishing sector (QSIA), recreational fishing sector (Sunfish), the aquaculture industry sectors and the seafood marketing sector. QFIRAC works with these and other stakeholders such as the conservation and indigenous sectors to identify their R&D needs (QFIRAC has commenced dialogue with the indigenous sector and to date has received a response from the Balkanu Cape York Development Corporation).

QFIRAC's other key stakeholders are the R&D providers in agencies such as AFFS, AIMS, CSIRO, the Reef CRC, the Coastal CRC, as well as researchers in Universities. QFIRAC works with these stakeholders to help ensure that the key R&D needs of the fishing industry are met.

QFIRAC has no research funds of its own for the commissioning of priority research. The R&D agencies mentioned above administer their own core R&D budgets, augmented by funding from FRDC and other external sources. QFIRAC sees considerable benefit in liaison with these agencies to coordinate research priorities and maximise the benefits from all ongoing research.

5. QFIRAC's Key R&D Areas

Process used to develop QFIRAC's R&D Plan

The Committee has consulted with stakeholders on their R&D priorities through the following activities:

- Regional one-day fora with research providers and industry sector representatives (Townsville, August 2001 and Hamilton Brisbane, October 2001)
- A one-day, FRDC-funded workshop of invited stakeholders in Brisbane on 26 November 2001. A report on this workshop has been produced (Young, 2002)
- A mail out request for information on stakeholder R&D priorities in February 2002
- Follow-up interviews with stakeholders, particularly members of the MACs and industry sectors in Brisbane in March 2002

The outcome of these consultations has been the identification of the following key R&D areas (not listed in any particular order):

- Socio-economic assessments
- Sustainability assessments
- Effects of fishing/cleaner production
- Aquaculture production efficiency
- Value-adding
- Non-fishing impacts on fisheries resources and fisheries habitats
- Skills development

Key R&D Areas

Each of the key R&D areas has several specific R&D needs identified by stakeholders which are listed below in Table 1. This list reflects only the key areas of research and is not comprehensive of all the research gaps identified by stakeholders.

Table 1: QFIRAC's Key R&D Areas

Key R&D Area	Specific priorities
Socio-economic assessments	a. Assessment of the net economic benefits of recreational fishing (freshwater & marine) and the seafood industry;
	b. Establishment of methodologies for resource allocation such as total economic valuation methodologies;
	c. Assessment of the socio-economic impacts of: * fisheries management strategies; * new aquaculture technology and developments; * fish stocking in marine and freshwaters;
	d. Quantification of the economic impact of habitat changes on fisheries;
	e. Improving our understanding of impediments to market development.
Sustainability assessments	a. Development of innovative stock assessment methodologies;
	b. Development of sustainability indicators for target, by-product and by-catch species in commercial fisheries; in particular for: * trawl permitted species; * mackerel and snapper; * shark; * threatened and potentially threatened species.
	c. Conduct ecological assessments of fisheries management strategies using for example a management strategy evaluation (MSE) approach.
Effects of fishing/ cleaner production	a. Assessment of the impact of fishing on the environment; in particular: * the quantification of the impact of trawling on the benthos and by-catch species;
	b. Development of environmentally friendly fishing technologies and methods to minimise the impact of fishing on the environment; in particular: * innovations which minimise the impact of trawling of the benthos and by-catch species;
Aquaculture production efficiency	a. Enhancements through stock improvements and genetics;
	b. Development of innovative production technologies for water management, treatment and re-use;
	c. Enhancement of live larval feeds and nutrition;
	d. Development of decision support tools for aquaculture site selection;
	e. Fish health (*this is considered a national priority addressed through the R&D priorities of FRDC's Aquatic Animal Health Subprogram*).

Key R&D Area	Specific priorities
Value-adding	a. Development of innovative approaches to increase the value of fisheries resources including: ∗ improved utilization of processing wastes ∗ improved use of under utilized fisheries resources ∗ optimising supply to markets and market development
Non-fishing impacts on fisheries resources and fisheries habitats	a. Innovative approaches to mitigation of impacts and influences of land-based activities on fisheries including run-off, habitat loss, catchment development and downstream effects of land use and urbanisation, for example through: ∗ Development of innovative low cost fishway technologies; ∗ Development of innovative methodologies to control identified pest species; ∗ Evaluation and identification of critical habitat and its role in fisheries productivity; ∗ Development and evaluation of restoration of fisheries habitat; ∗ Development of research based guidelines for environmental flows and minimum draw down levels in impoundments to maintain viable fisheries.
Skills development	a. Development of participatory skills for members of Management Advisory Committees (MACs) and their Scientific Advisory Groups (SAGs), Qld Aquaculture Development Advisory Committee (QADAC) and other fisheries fora;
	b. Development of leadership and policy skills for industry members;
	c. Improvements in the liaison and understanding between the seafood industry, recreational fishers, traditional fishers, the community and the government;
	d. Commercial fishing training for indigenous people;
	e. Skills development in post-harvest, food safety and marketing;
	f. Enhance fish health capacity of aquaculture industry.

6. Relationship between QFIRAC's key R&D areas and the priorities of stakeholders, FRDC and FIDC

The relationship between QFIRAC's key R&D areas and the R&D priorities of the MACs and other stakeholders that were identified during the stakeholder interviews in March 2002 are shown in Tables 2 and 3. The relationship of these key areas to FRDC's Programs and Strategies (presented in "Investing for tomorrow's fish: the FRDC's Research and Development Plan, 2000-2005") and to those FIDC Strategies and Substrategies most related to R&D (as identified from the vision pamphlet at the 26 November workshop) are shown in Table 4.

These three Tables should be considered as a guide only. Where available the R&D priorities of stakeholders are listed in **Appendix 2.**

Table 2. Guide to the relationship between QFIRAC's key R&D areas and the key MAC priorities

QFIRAC key R&D area	Stakeholder sector						
	Trawl MAC	Crab MAC	Finfish MAC	Gulf MAC	Harvest MAC	Reef MAC	Freshwater MAC
Socio-economic assessments	✓	✓	✓				✓
Sustainability assessments	✓	✓	✓	✓	✓	✓	✓
Effects of fishing/cleaner production	✓			✓		✓	✓
Aquaculture production efficiency							
Value-adding							✓
Non-fishing impacts on fisheries resources		✓					✓
Skills development							

Table 3. Guide to the relationship between QFIRAC's key R&D areas and the key priorities of stakeholder sectors (other than MACs)

QFIRAC key R&D area	Stakeholder sector								
	QSIA	Sunfish	Aqua-culture industry	Seafood Marketing	GBRMPA	AFFS (F&A)	Indigen-ous	Conser-vation	Bait & Tackle
Socio-economic assessments	✓	✓	✓	✓	✓		✓	✓	✓
Sustainability assessments	✓	✓	✓		✓	✓	✓	✓	
Effects of fishing/cleaner production	✓				✓			✓	
Aquaculture production efficiency		✓	✓			✓			
Value-adding	✓	✓	✓	✓					
Non-fishing impacts on fisheries resources	✓	✓			✓	✓	✓	✓	
Skills development	✓	✓	✓	✓		✓	✓		

Table 4. Relationship between QFIRAC's key R&D areas and the priorities of FRDC and FIDC

QFIRAC key R&D area	FRDC Program			FIDC Strategy			
	Program 1 Natural Resources Sustainability	Program 2 Industry Development	Program 3 Human Capital Development	Strategy 1 Ecologically sustainable fishing	Strategy 2 Managing change in fisheries	Strategy 3 Smart delivery	Strategy 4 Co-operating to deliver
Socio-economic assessments	✓	✓		✓			
Sustainability assessments	✓			✓	✓		
Effects of fishing/cleaner production	✓			✓			
Aquaculture production efficiency		✓					
Value-adding		✓		✓			
Non-fishing impacts on fisheries resources	✓			✓			✓
Skills development			✓			✓	

7. Updating & Communicating QFIRAC's R&D Plan

The fora organised with stakeholders and R&D providers in Townsville and Brisbane in 2001 revealed the need to continue with these events every year in either Townsville or Cairns and south-east Queensland, recognised as key locations for both research providers and stakeholders.

Conducting these fora in March-April each year will provide QFIRAC with the opportunity to update its R&D Plan, explain its priorities and processes for the new round of FRDC applications, and facilitate industry and R&D providers getting together to develop new preliminary proposals that address high priority needs.

QFIRAC's annual cycle of operations

1. Meetings

QFIRAC's operations are linked with FRDC's annual cycle that culminates in the submission of applications on 1 December each year.

QFIRAC intends to meet six times per year. Each meeting lasts one day

- January to provide advice to FRDC on final applications
- March – April to discuss the R&D Plan with stakeholders
- May to finalise the R&D Plan, priorities and processes for the new round
- August to assess preliminary research proposals and provide feedback to applicants on the ranking and merits of their proposal
- October to assess draft FRDC applications, provide feedback to applicants on the ranking and merits of their proposal, and provide advice to FRDC.

Note that in 2002 the stakeholders meetings (in Townsville and Brisbane) will occur later in the year rather than in March-April (as planned for 2003). This is because the stakeholder meetings held in late 2001 remain relevant to the current FRDC application round. QFIRAC intends to meet with stakeholders in Townsville in August 2002 and Brisbane in October 2002 to keep them informed of developments.

More details are provided in **Appendix 3** - timetable of events for 2002.

2. FRDC funding

How the FRDC is funded

FRDC funding is based on the gross value of production (GVP) of Australia's fisheries (and aquaculture) production. For 2000/01 this GVP was about $2.48 billion. The Commonwealth Government provides an annual appropriation of 0.5% of GVP, and provides matching funds up to a maximum of a further 0.25% GVP provided industry contributes at least 0.25% GVP. In recent years Queensland industry (primarily the commercial sector) has contributed just over $500,000 per annum, which is slightly less than the minimum 0.25% of GVP for Queensland.

How FRDC funds are allocated

In theory for every dollar industry contributes to FRDC Queensland can expect three dollars in return. In practice Queensland has tended to do somewhat better than this. Total funding provided to Queensland in 2002/03 included the $1.3 million for new projects, plus $2.5 million for continuing projects. This represents a return on investment of 6.4 to 1.

FRDC allocates its total available funds between its three Programs as follows: Program 1 Natural Resources Sustainability 60%, Program 2 Industry Development 35%, Program 3 Human Capital Development 5%.

The realities of FRDC funding for applicants

Applicants need to be aware of the highly competitive nature of FRDC funding. In the application round for 2001/02 FRDC received over 150 applications nationwide, seeking over $18 million in the first year. About 80 of these applications were funded at a total cost of about $7 million.

In Queensland's case FRDC funded 7 of the 20 draft applications that QFIRAC ranked in October last year. These were worth a total of $1.3 million in year one (2002/03).

FRDC's Subprograms

About 10% of FRDC R&D is managed through Subprograms. Applicants should be familiar with the details of these subprograms before lodging an application (see FRDC's website).

The current FRDC Subprograms are:

- Abalone Aquaculture
- Atlantic Salmon Aquaculture
- Aquaculture Diet Development
- Aquatic Animal Health
- Effects of Trawling
- Ecologically Sustainable Development (ESD) Reporting and Assessment
- Rock Lobster Post Harvest
- Rock Lobster Enhancement & Aquaculture
- South East Fishery (SEF) Industry Development
- Southern Bluefin Tuna (SBT) Aquaculture

Importance of FRDC's flow of benefits (FOB)

In preparing an application to FRDC, careful consideration must be given to apportioning the flow of benefits likely to arise from the project between the various State and Commonwealth managed fisheries (including aquaculture) and the three fisheries sectors (commercial, recreation, traditional). FRDC seeks advice from the nominated beneficiaries (through the relevant FRAB(s)) on the appropriateness and priority of the R&D application, and on the value of the results of the project following its completion.

There are no standard formulas for apportioning the flow of benefits. However, as a general guide the flow of benefits across the commercial sector could be based on the relative gross values of production. Flow of benefits across all fishing industry sectors could be based on the relative percentages of catch. If necessary applicants should seek advice on the flow of benefits from relevant fisheries management agencies.

3. Guidelines for 2002 to applicants for preliminary research proposals

How to decide if you should submit a preliminary proposal to QFIRAC, to a FRDC Subprogram or to one or more other FRABs.

Use the following decision tree as a guide.

1. Is the Preliminary Proposal of relevance to QFIRAC's Key R&D Areas?	No	• Do not Submit
	Yes	• Submit to QFIRAC
2. Is the Preliminary Proposal of relevance to a FRDC Subprogram?	No	• Submit to QFIRAC
	Yes	• Submit to relevant Subprogram • Submit to QFIRAC
3. Does the Preliminary Proposal have the Flow of Benefits >20% to at least one other State or the Commonwealth?	No	• Submit to QFIRAC
	Yes	• Submit to relevant FRAB(s) • Submit to QFIRAC
4. Does the Preliminary Proposal have the Flow of Benefits distributed between most/all States and Commonwealth (ie no one State/ Commonwealth has 20% or more FOB)?	No	• Submit to QFIRAC
	Yes	• Submit to QFIRAC

Timetable for submission of preliminary research proposals

The call for preliminary research proposals is issued in early June along with QFIRAC's R&D priorities and other pertinent information. Applicants have until 19 July to submit preliminary proposals to the Secretary.

Format

The proposals must be submitted in the required format – 2 pages maximum, 11 point font. E-mail is preferred as it facilitates the collation of one document for distribution by the Secretary to QFIRAC members for their consideration prior to the assessment meeting in August.

See **Appendix 3** for preliminary proposal format.

Consultation with QFIRAC members & stakeholders

In preparing proposals applicants are strongly encouraged to:

- address QFIRAC's R&D key areas listed above
- discuss their ideas with QFIRAC members (see **Appendix 1** for contact details), and with the appropriate MAC(s) and industry sector(s).
- Obtain written support for the proposal from key stakeholders (preferably with an offer of cash or in-kind)
- Do their homework on what research has been/is being done in the field particularly previous and current FRDC projects.

Contact with FRABs in other States

Applicants need to be aware that they **must** consult with FRABs in those other States where the flow of benefits (FOB) of the proposal attributed to those States are 20% or greater. For example, the FOB could be 50% to Queensland managed fisheries (and aquaculture), 20% to NSW, 10% to Commonwealth and 20% to Northern Territory. In this example the applicant should send the proposal to the Qld, NSW and NT FRABs (see FRDC website for contact details **www.frdc.com.au**).

Contact with FRDC subprograms

FRDC has established 10 subprograms on specific fisheries or issues. If a proposal relates to one or more of these subprograms then it **must** be submitted to the subprogram as well as to the host FRAB (see FRDC's web site for details of these subprograms and contacts).

Assessment criteria used in ranking proposals

Past experience shows that QFIRAC receives an average of 50 to 60 preliminary proposals per year. The Committee aims to reduce that number to 10 to 20 proposals that best address stakeholder needs. These applicants are then invited to submit full draft FRDC applications (see below).

At its August meeting QFIRAC will assesses proposals against three criteria.

Is the Proposal **Relevant** to QFIRAC's key areas?	Yes/No
Is the Proposal **Attractive**?	Yes/No
Is the Proposal **Feasible**?	Yes/No

Decision making process

On the basis of the responses to these three questions the Committee, through discussion and consensus, ranks each proposal as either High, Medium or Low.

The applicants whose proposals are ranked High are invited to submit full draft FRDC applications.

Feedback on proposals to FRDC & applicants

FRDC is formally advised of QFIRAC's rankings and any specific comments on each of the proposals. In addition senior FRDC staff attend the QFIRAC assessment meetings.

Within one week of the QFIRAC meeting in August all applicants will be advised by letter or e-mail of the ranking of their proposal(s). QFIRAC may provide suggestions on what the applicant needs to consider in preparing a draft FRDC application. Given the highly competitive nature of FRDC's funding process those applicants who receive a Medium or Low ranking are not encouraged to submit a full draft FRDC application.

4. Guidelines for 2002 to applicants for FRDC full draft applications

Timetable for submission of draft applications

Applicants who receive a High ranking for their preliminary proposal(s) have until 4 October 2002 to submit full draft applications.

Format

Refer to the FRDC's website for the web-based application format FRDCWEBAPP. Applicants should e-mail their drafts to the Secretary in .rtf format.

Consultation with QFIRAC members & stakeholders

As with the preliminary proposals applicants are strongly encouraged to discuss their application with QFIRAC members (see **Appendix 1** for contact details), and with the appropriate MAC(s) and industry sector(s).
Applicants should provide written letters of support for the project from key stakeholders (preferably with an offer of cash or in-kind).

Contact with FRABs in other States

As with the preliminary proposals applicants need to be aware that they **must** consult with FRABs in those other States where the flow of benefits (FOB) of the application attributed to those States are 20% or greater. For example, the FOB could be - 50% to Queensland managed fisheries (and aquaculture), 20% to NSW, 10% to Commonwealth and 20% to NT. In this example the applicant should send the application to the Qld, NSW and NT FRABs (see FRDC website for details).

Contact with FRDC subprograms

FRDC has established 10 subprograms on specific fisheries or issues. If an application relates to one of these subprograms then it **must** be submitted to the subprogram as well as to the host FRAB (see FRDC's web site for details of these subprograms and contacts).

Assessment criteria used in ranking applications

QFIRAC assesses about 20 draft applications each year. Of these FRDC funds less than 10 (see earlier section on FRDC funding).

At its October meeting QFIRAC will assesses applications using a simplified version of CSIRO's attractiveness/feasibility assessment methodology.

Relevance to QFIRAC's key areas

The application is assumed to be relevant based on its High ranking at the preliminary proposal stage

Attractiveness

- Does the project have stakeholder involvement/support and collaboration? (industry, government and researchers)
- Does the project build on existing knowledge and contribute new knowledge and understanding?
- Will the planned outcomes provide sound value for money benefits?
- Is there an appropriate financial contribution?

Feasibility

- Are the project outcomes and objectives clearly set out?
- Are the approach and methods well described?
- Does the applicant/Principal Investigator /collaborators have the capacity, competency, commitment to achieve the outcomes?

Decision making process

Each member is asked to rank each project from highest (1) to lowest ("n") on each criterion - attractiveness and feasibility, where "n" is the number of applications.

The results are presented in a XY graph where the X axis is feasibility and Y axis is attractiveness. The Committee discusses the rankings before agreeing on an overall final ranking of the applications from 1 to "n".

Feedback on applications to FRDC & applicants

FRDC is formally advised of QFIRAC's rankings and comments on specific applications. In addition senior FRDC staff attend the assessment meeting.

Within one week of the October meeting all applicants will be advised by letter or e-mail of the ranking of their application(s) and any comments/suggestions on what the applicant needs to consider in preparing their final FRDC application(s) by the 1 December deadline.

5. For more information

QFIRAC website: www.dpi.qld.gov.au/ fishweb/ and use Search function for QFIRAC

FRDC website: www.frdc.com.au

6. References

Young, Peter C (2002) *QFIRAC Research & Development Workshop - 26/11/02,* 35pp (published by DPI).

List of Acronyms

AFFS – Agency for Food & Fibre Sciences (DPI)

AIMS – Australian Institute of Marine Science

CRC – Cooperative Research Centre

CSIRO – Commonwealth Scientific and Industrial Research Organisation

DPI – Department of Primary Industries

FIDC – Fishing Industry Development Council

FOB – Flow of Benefits

FRAB – Fisheries Research Advisory Body

FRDC – Fisheries Research and Development Corporation

GBRMPA – Great Barrier reef Marine Park Authority

GVP – Gross Value of Production

MAC – Management Advisory Committee

MSE – Management Strategy Evaluation

QAIC – Queensland aquaculture Industry Council

QADAC – Queensland Aquaculture Industry Council

QCC – Queensland Conservation Council

QFS – Queensland Fisheries Service

QFMA – Queensland Fisheries Management Authority

QFIRAC – Queensland Fishing Industry Research Advisory Committee

QSIA – Queensland Seafood Industry Association

QSMA – Queensland Seafood Marketers Association

R&D – Research and Development

SAG – Scientific Advisory Group/Stock Assessment Group

Appendix 1

QFIRAC Members as at April 2002

QFIRAC members	PHONE NO.	FACSIMILE NO.:	E-MAIL
Mr Martin Breen, Aquaculture Council of Queensland	07 3255 1070		apfa@qff.org.au
Mr Jim Gillespie, Queensland Fisheries Service, Department of Primary Industries	07 3224 2184	07 3229 8146	jim.gillespie@dpi.qld.gov.au
Dr Paul Grieve, Fisheries & Aquaculture (AFFS), Department of Primary Industries	07 3400 2056	07 3408 3535	paul.grieve@dpi.qld.gov.au
Ms Dorothea Huber, Great Barrier Reef Marine Park Authority	07 4750 0743 M: 0408 701 309	07 4750 0766	d.huber@gbrmpa.gov.au
Dr Daryl McPhee, Queensland Seafood Industry Association	07 3365 6082		d.mcphee@mailbox.uq.edu.au
Mr Steve Morgan, Sunfish (Queensland) Inc.	07 3268 3992 M: 0427 089 879	07 3268 3993	s.morgan@fishingmonthly.com.au
Ms Kirsti Sampson, Marine & Coastal Community Network	07 4771 6636 M: 0408 709 433	07 4772 5477	qld@mccn.org.au
Mr Craig Winkel, Queensland Seafood Marketers Association	07 5492 3812 M: 0412 634 997	07 5492 3812	seafooddirections@powerup.com.au
Dr Peter Young, Chair and Independent Scientist	07 3374 0784	07 3374 0784	pcy@uq.net.au
Ms Imogen Zethoven, World Wildlife Fund	07 3839 2677	07 3839 2633	izethoven@wwfqld.org
Secretary			
Mr Bob Pearson, Agency for Food & Fibre Sciences (Fisheries & Aquaculture), DPI	07 3224 2164	07 3224 2804	bob.pearson@dpi.qld.gov.au

Appendix 2

R&D Priorities of Stakeholders

Stakeholder sector	R&D priorities
Fishery MACs	**Contact relevant Fisheries Resource Manager in Queensland Fisheries Service, Department of Primary Industries** **Phone: 13 25 23**
Queensland Aquaculture Industries Federation (Inc)	**Contact QFIRAC member**
Australian Prawn Farmers Association	**Contact QFIRAC member** **See website: www.apfa.com.au**
Queensland Seafood Industry Association	**Contact QFIRAC member**
Queensland Seafood Marketers Association	**Contact QFIRAC member**
Sunfish Queensland Inc	**Contact QFIRAC member** **See website: www.sunfishqueensland.org**
GBRMPA	**Contact QFIRAC member** **See website: www.gbrmpa.gov.au**

Appendix 3

Timetable of QFIRAC events in 2002 for the FRDC funding round in 2003/04

Date	Task/Event	Duration
30 January 2002	**QFIRAC meeting** to consider FRDC applications for 2002/03 funding that have a flow of benefits to Queensland	1 day
21 March	**QFIRAC meeting** to develop Strategic R&D plan	1 day
29 May	**QFIRAC meeting** to finalise Strategic R&D plan, and consider proactive projects	½ to 1 day
3 June	Call for preliminary proposals to R&D providers	7 weeks
19 July	**Deadline** for preliminary proposals to Secretary	
21-23 July	Secretary collates preliminary proposals	3 days
23 July	Secretary posts preliminary proposals to members	
24 July to 18 August	Members consider preliminary proposals	3 ½ weeks
19 August	**QFIRAC meeting** to assess preliminary proposals.	1 day
20 August	**QFIRAC meeting** with stakeholders (Townsville)	1 day
21-23 August	Secretary prepares feedback to all proponents. Proponents whose proposals are ranked High will be invited to submit full draft FRDC applications.	4 days
23 August	Secretary posts or e-mails feedback to all research providers	1 day
26 August to 4 October	Selected research providers prepare draft FRDC applications.	6 weeks
4 October	**Deadline** for invited research providers to submit draft FRDC applications.	
7-8 October	Secretary distributes draft applications to members.	2 days
9-24 October	Members consider draft FRDC applications	2 weeks
24 October	**QFIRAC meeting** to consider and rank applications, provide feedback to applicants and provide advice to FRDC on the priority ranking of these applications.	1 day
25 October	**QFIRAC meeting** with stakeholders (Brisbane)	1 day
26 October to 1 November	Secretary provides feedback to applicants	1 week
1-29 November	Research providers finalise applications.	4 weeks
1 December	**Deadline** for applications to FRDC	

Appendix 4

QUEENSLAND FISHING INDUSTRY RESEARCH ADVISORY COMMITTEE

2003-2004 Preliminary Research Proposal (*format - 2 pages maximum*)

Project Title

(*twelve words maximum*)

FRDC Program identification

(select one) 1. Natural Resources Sustainability, 2. Industry Development, 3. Human Capital Development

Principal Investigator Contact Details

Title: First Name: Surname:
Organisation:
Mailing Address:

Phone No: Fax No: Email:

Commencement and completion date

Commencement date:
Completion date:

Preliminary Budget

FRDC Contribution	**2003-04 $**	**2004-05 $**	**2005-06 $**	**2006-07 $**	**TOTAL $**
Salaries and on costs					
Travel					
Operating					
Capital (equipment)					
CORPORATION TOTAL					
Research Organisation contribution					
Total of Industry & Other Funding					
GRAND TOTAL					

Need

Define succinctly the need for the research (less than 250 words)

NB This para is carefully assessed because it relates the project to QFIRAC's R&D key areas and to the priorities of stakeholders.

Objectives

State succinctly the specific objective/s of the research.
Objectives should address "what" is to be achieved rather than "how" or "why".

(Less than 100 words)

Industry and management consultation

Briefly indicate level of industry support through consultations etc and attach letters of support
Has the project been endorsed by the appropriate Management Advisory Committee (MAC)?
Identify any other sources of financial contributions.

(less than 50 words)

NB Projects not clearly and accurately identifying proper industry consultation will be disadvantaged

Direct benefits and beneficiaries

Identify the benefits arising from this project. Particularly a net value to the industry on completion of the project if possible.
Identify the industry sectors and/or community in general that will benefit directly from the research.
(less than 100 words)

Estimated Flow of Benefits *(as required by FRDC to determine how its R&D investment is allocated to the various jurisdictions)*

Queensland managed fisheries and aquaculture Fisheries and aquaculture managed by other States (specify) AFMA managed fisheries Other beneficiaries	
Total for all fisheries	100%

Project Design and Methodology (Including technology transfer and adoption)

A brief description of the design and methodology of the proposed project.

Research Capability and Experience

A brief resume of the investigator's experience and expertise relevant to this project

Guidelines:

- *The Preliminary Research Proposal is to be restricted to 2 pages or less*
- *Use font size 11pt* ***minimum***
- Consistency of format, and brief and concise descriptions are essential requirements to assist the assessment process.
- *Contact individual QFIRAC members and stakeholders for more specific information about their priorities.*
- *Attach letters confirming stakeholder support (preferably cash and/or in-kind)*
- *Ensure awareness of previous and current research in the field*

Forward the PRP – <u>preferably via e-mail and in MS Word format</u> - to:

Bob Pearson
Secretary
Queensland Fishing Industry Research Advisory Committee
C/- Fisheries & Aquaculture (AFFS), Department of Primary Industries
GPO Box 46, BRISBANE, 4001

Phone: 07 3224 2164
E-MAIL bob.pearson@dpi.qld.gov.au

No later than 4pm on Friday 19 July 2002.