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## Future directions for the Rock Lobster Industry Advisory Committee and the Western Rock Lobster Managed Fishery

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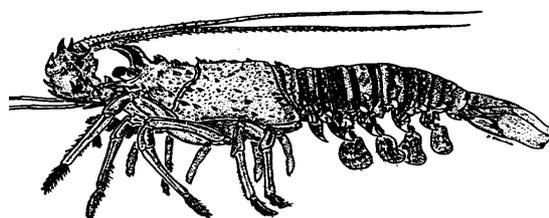
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# Fisheries discussion paper

## Future directions for the Rock Lobster Industry Advisory Committee and the Western Rock Lobster Managed Fishery



A discussion paper prepared by Kevin Donohue  
on behalf of the Rock Lobster Industry Advisory Committee

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Fisheries management paper No. 123

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# CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>4</b>
<b>PART 1 - RLIAC'S ROLE, OPERATION &amp; ADVICE ISSUES .....</b>	<b>7</b>
<b>1.1 Is the structure of the Sub-committees appropriate? .....</b>	<b>7</b>
1.1.1 Background to RLIAC's Role and membership .....	7
1.1.2 Sub-committees .....	8
<b>1.2 Should RLIAC move to a three year rolling decision making process? .....</b>	<b>10</b>
1.2.1 Existing decision making process .....	10
1.2.2 Alternative decision making processes.....	12
<b>1.3 Are the communication/consultative processes effective? .....</b>	<b>12</b>
1.3.1 Existing communication consultative process .....	12
1.3.2 Alternative communication/consultation process .....	14
<b>1.4 Should RLIAC <u>only</u> concern itself with the biological sustainability of the fishery? .....</b>	<b>15</b>
<b>1.5 Should RLIAC investigate and advise on management changes to bring about structural change in order to maximise the benefits flowing to the industry? .....</b>	<b>16</b>
<b>1.6 Should RLIAC research and advise on marketing and socio-economic issues? .....</b>	<b>17</b>
<b>PART 2 - MANAGEMENT ISSUES .....</b>	<b>21</b>
<b>2.1 Sustainability.....</b>	<b>21</b>
<b>2.2 Resource Sharing .....</b>	<b>23</b>
<b>2.3 National Competition Policy .....</b>	<b>24</b>
<b>2.4 Input versus output controls .....</b>	<b>25</b>
<b>2.5 Rock Lobster Enhancement.....</b>	<b>27</b>
<b>2.6 Large lobsters attracting higher prices.....</b>	<b>28</b>
<b>2.7 Continuity of supply of live lobsters .....</b>	<b>29</b>
<b>2.8 Within-season product flow .....</b>	<b>31</b>
<b>2.9 Manipulating the catch between seasons.....</b>	<b>32</b>
<b>2.10 Adequacy of product promotion .....</b>	<b>34</b>
<b>2.11 Fleet size .....</b>	<b>34</b>
<b>3.0 SUMMARY .....</b>	<b>35</b>
<b>4.0. REFERENCES.....</b>	<b>36</b>



## EXECUTIVE SUMMARY

This paper is divided into two parts. The purpose of Part One is to get industry's views on the six key questions (listed below) concerning the Rock Lobster Industry Advisory Committee's role, operation and advice. The purpose of Part Two is to present those management issues identified at the joint RLIAC/Western Rock Lobster Development Association workshop held on the 16 September 1998.

### Part One - RLIAC's Role, Operation and Advice Issues

Part One of this discussion paper seeks to address questions raised as a result of the activities and issues the RLIAC has been involved in during 1998. Half of these six questions relate to the role and operation of the RLIAC, while the other half are concerned with advice provided by the RLIAC.

The six key questions are described below, along with some possible responses.

*1. Is the structure of RLIAC's sub-committees appropriate?*

If the answer is 'yes', the sub-committee structure is likely to remain the same. Otherwise, alternatives such as merging the research sub-committees or removing the sub-committees could be considered.

*2. Should the RLIAC move to a three year rolling decision making process?*

If the answer is 'yes', the RLIAC would need to provide advice for the next three years in March 1999 and then commence working on the 2002/2003 management advice. Otherwise, the RLIAC could adopt a shorter planning horizon or provide advice on an 'as needs' basis.

*3. Are the consultative processes effective?*

If the answer is 'yes', there is no change. Otherwise, RLIAC would move to an agreed consultation cycle acceptable to the Minister, RLIAC and industry.

The three key questions relating to advice provided by RLIAC are:

*4. Should RLIAC only concern itself with the biological sustainability of the fishery?*

If the answer is 'yes', the focus of the RLIAC could be limited to:

- maintaining the rock lobster breeding stock;
- resolving resource sharing principles; and
- simplifying the rules (this may include removing those rules not necessary for maintenance of the breeding stock, eg. maximum and minimum pot holdings, processing restrictions).

5. *Should RLIAC investigate and advise on management changes to bring about structural change, in order to maximise the benefits flowing to the industry?*

If the answer is 'yes', the RLIAC could consider:

- the need to change industry practices to increase its competitiveness;
- alternative structures that would improve the benefits derived from the fishery;
- whether management by output controls would provide greater economic benefits;
- the need to change processing regulations;
- rock lobster and puerulus enhancement; and
- increased diversity of management arrangements for Zones A, B and C.

6. *Should RLIAC research and advise on marketing and socio-economic issues?*

If the answer is 'yes', the RLIAC could consider:

- establishing a market and economic research unit;
- increasing the quantity of larger lobsters caught;
- extending the period of supply of live lobsters;
- evening out catch flows;
- manipulating the catch between seasons; and
- fleet size.

## **Part Two - Management Issues**

Part Two of this report presents the results of a joint RLIAC/industry workshop called "*Major issues which RLIAC should be addressing over the next three years*" and provides some outcomes and possible actions for consideration.

One of the functions of the Rock Lobster Industry Advisory Committee (RLIAC) under the *Fish Resources Management Act 1994 (FRMA)* is to identify issues affecting the WA rock lobster fishery s.30.(1)(a). To assist the RLIAC with carrying out this function, rock lobster industry representatives were invited to participate in a workshop aimed at identifying the issues affecting the fishery over the period 1999/2000 to 2001/2002. This approach acknowledges the resolution of the WAFIC rock lobster sub-committee that "*the RLIAC should be more open with involving industry at the start of the process*".

At the workshop, it was resolved to have two reports prepared:

1. A review of the management package over the five year period 1992/93 to 1997/98 (currently in preparation).

2. A discussion paper on the issues affecting the rock lobster fishery over the period 1999/2000 to 2001/2002 (this paper - Fisheries Management paper No. 123).

Time constraints have meant that the discussion paper - the one you are currently reading - has had to be prepared at the same time as the review. Unfortunately, this situation has meant that the degree to which some of the issues can be discussed has been limited.

Nonetheless, to assist the RLIAC in providing the Minister, in February 1999, with management advice covering the next three years, it has been necessary distribute these two papers at the same time.

The RLIAC will be organising meetings in regional centres where the review and issues reports will be discussed. Details of these meeting are provided below.

### **VENUES AND MEETING TIMES**

<b>Date</b>	<b>Location</b>	<b>Venue</b>
Monday, 1 Feb 1999	Geraldton	Geraldton Entertainment Centre Urch Street
Tuesday, 2 Feb 1999	Jurien Bay	Jurien Community Centre Bashford Street
Wednesday, 3 Feb 1999	Perth	Underwater World Convention Centre Hillary's Boat Harbour

All meetings to commence at 1.00pm and finish at 5.00pm.

## **PART 1 - RLIAC'S ROLE, OPERATION & ADVICE ISSUES**

### **1.1 Is the structure of the Sub-committees appropriate?**

#### **1.1.1 Background to RLIAC's Role and membership**

##### **Role**

The functions of the RLIAC are given in section 30 of the *Fish Resources Management Act 1994 (FRMA)*. These are:

- a) To identify issues that affect rock lobster fishing;
- b) To advise the Minister on matter relating to the management, protection and development of rock lobster fisheries; and
- c) To advise the Minister on matters relating to rock lobster fisheries on which the advice of the Advisory Committee is sought by the Minister.

As a consequence of the above, the RLIAC has taken the position that it involve itself in providing advice on all matters affecting the fishery. However, this position is sometimes at odds with the views of some sectors of the industry.

The RLIAC provides advice on all aspects of the management of the western rock lobster fishery, including aquaculture, recreational and commercial fisheries management. The Western Australian Fishing Industry Council (WAFIC) supports the RLIAC advising on management arrangements for all client groups, as do the RLIAC commercial fishing representatives.

##### **Membership**

The membership of committee consists of:

- independent Chairman;
- Executive Director;
- an officer from Fisheries WA;
- two rock lobster processors;
- eight persons who engage in commercial rock lobster fishing; and
- one person who engages in recreational rock lobster fishing.

There is a full time Executive Officer who attends all the RLIAC and subordinate committee meetings. The Minister makes all appointments to the RLIAC, which are provided to Cabinet for endorsement.

The selection of the persons appointed to the RLIAC who engage in commercial fishing is based on their experience and skills, but the regional spread of the RLIAC membership is an important consideration. Other factors may be taken into account, such as association/s supporting a particular nomination and the size of the person's fishing operation.

Terms of appointment are usually for a two year period and members can seek to be reappointed for additional terms. Commercial fishing vacancies are required to be advertised in the *West Australian* newspaper and associations are invited to make nominations.

The WAFIC has provided the Minister with its review of the RLIAC structure and process.

The main findings of the review were:

- an endorsement - by those participating - of the current membership;
- that industry (i.e. rock lobster associations) jointly prepare and provide the Minister a list of nominees, in order of preference; and
- terms of appointment be for three years with members limited to a maximum of two consecutive terms.

Other matters that were discussed in the review included:

- definition of catching sector members;
- the fishing industry experience of the independent Chairman;
- remuneration of RLIAC members;
- sub-committee structure; and
- involvement of RLIAC in market, social and economic issues.

## **1.1.2 Sub-committees**

### **1.1.2.1 Existing structure of RLIAC**

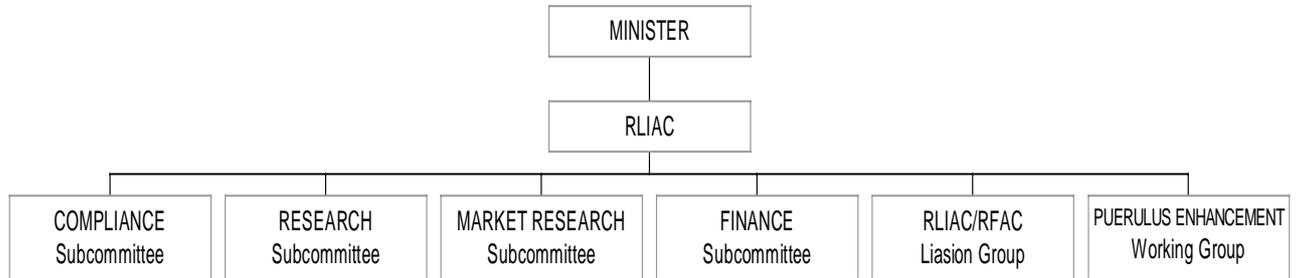
The reporting structure for each of the RLIAC subordinate committees is given in Figure 1. Each of the subordinate committees reports directly to the RLIAC, while the RLIAC reports directly to the Minister.

Where a particular sub-committee is providing advice that has budget implications, the Finance sub-committee's advice is provided on budget implications to RLIAC at the same time. These sub-committees are more expertise-based than RLIAC itself and meet on an as-needs basis, which is usually from two to four times per year. Each sub-committee has 'terms of reference' to follow and membership is specified.

Chairs of the sub-committees are usually RLIAC members, while nominees to fill vacancies are normally sought from the appropriate industry bodies.

Recommendations for appointment made by the sub-committees are provided to RLIAC for endorsement.

The memberships of each of the sub-committees are published in the RLIAC Newsletter.



**Figure 1** RLIAC sub-committee structure

### 1.1.2.2 Alternative RLIAC structures

#### *Option 1. Merge Research and Market sub-committees*

There is some support from industry to combine the two research sub-committees - the Market Research Advisory Sub-committee (MRAS) and Research Sub-committee (RS) - so that biological and marketing issues can be considered jointly. The combined committee would be known as the RS.

The composition of the two sub-committees is very different - the MRAS has two RLIAC members on it and is expertise-based, with processors and marketing experts making up the rest of the membership. In contrast, the RS has one RLIAC member and two expert researchers, while the rest of the committee is made up of fishing representatives. The terms of reference of the two sub-committees are also quite different.

The terms of reference of the MRAS are to:

- provide expert advice on relevant management strategies to maximise economic returns from the marketing of rock lobster;
- undertake ongoing analytical work to describe the rock lobster market for industry, Government and RLIAC; and
- identify strategies which could increase market returns on issues such as trade barriers, tariffs, etc.

Whereas the terms of reference of the RS are to:

- prioritise research projects for funding purposes;
- disseminate research priorities and issues; and

- evaluate research.

All research projects funded by the commercial industry are to be considered by the RS.

Clearly, the MRAS has a focus on market research, whereas the RS is concerned with all research projects. Therefore, any concerns that the industry has over the operation of the MRAS projects can be dealt with by the RS and ultimately RLIAC - which both have greater industry representation than the MRAS. In this way, concerns that research is not coordinated properly can be dealt with as, with this option, the RS will be coordinating all research projects.

## 2. *No sub-committees*

Another alternative is to have RLIAC no sub-committees at all. Under this structure, the RLIAC members would deal with all business matters directly. The arguments for and against this alternative are given below.

<b>FOR</b>	<b>AGAINST</b>
<ul style="list-style-type: none"> <li>• Potential cost savings</li> <li>• Members more familiar with all details of RLIAC business</li> </ul>	<ul style="list-style-type: none"> <li>• Greater time commitment of RLIAC members</li> <li>• Increased cost to members</li> <li>• Less 'grass roots' involvement in RLIAC processes</li> <li>• Long meetings are less efficient - and RLIAC meetings would need to be longer to deal with the increased business</li> <li>• Less expertise-based input into the RLIAC meetings</li> </ul>

## **1.2 Should RLIAC move to a three year rolling decision making process?**

### **1.2.1 Existing decision making process**

The existing decision-making process is primarily reactive, because management changes normally occur when there is a demonstrated need for change. This is usually as a result of some biological imperative (as was the case in 1993/94).

A greater emphasis on strategic planning for the future has the potential to deal with problems before they arise.



## **1.2.2 Alternative decision making processes**

### *1. Three Year Rolling Plan*

Moving to a three rolling year plan (planning for the third year in advance) has been proposed for the RLIAC because it may lead to more gradual changes, provide a longer implementation period and give more certainty for business planning.

Accordingly, the RLIAC has undertaken to provide the Minister with advice on a three year rolling plan in February 1999. However, during recent discussions with industry the appropriateness of this type of planning cycle to the western rock lobster fishery was questioned.

One of the difficulties the committee is currently faced with in moving to a three year rolling plan is that there are no proposals for industry to consider over the next three years.

### *2. Fixed Period Plans*

Under this planning cycle, management arrangements would stay in place for a fixed period of time. Fixed term plans, although stable throughout the life of the plan, can be disruptive during the change-over phase.

Although this type of planning provides the certainty conducive to good business planning, it does not allow for the need to react to changing conditions that may occur within the planning period.

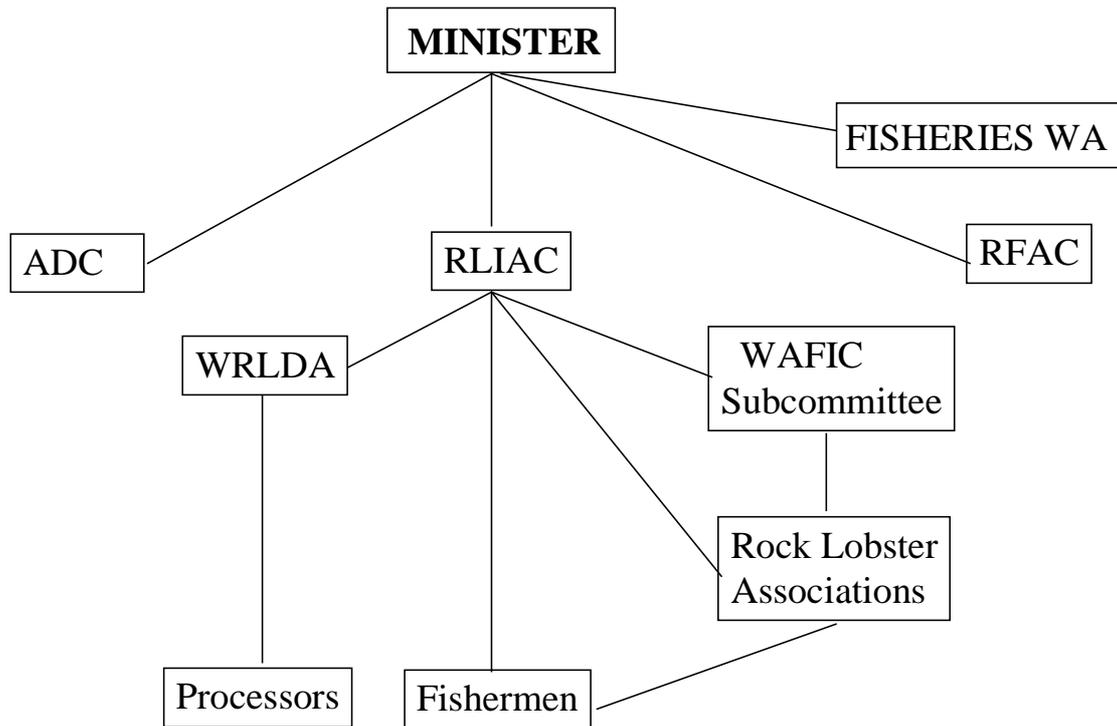
## **1.3 Are the communication/consultative processes effective?**

### **1.3.1 Existing communication consultative process**

#### *Communication*

The RLIAC is expected to develop effective communication with the Minister and stake-holders. Members of the RLIAC should communicate with interest groups about issues that are before the committee - and report back to the RLIAC on the views of the interest groups on these matters.

A general outline of the communication links between the Minister and the various fishing bodies are given in Figure 2. All groups have direct links to the Minister and Fisheries WA, but to avoid cluttering the diagram these links have not been shown.



Notes  
 ADC - Aquaculture Development Council  
 RFAC - Recreational Fishing Advisory Committee  
 WRLDA - Western Rock Lobster Development Association

**Figure 2** Various fishing bodies involved in the western rock lobster fishery

The ways RLIAC communicates with the industry include:

- RLIAC newsletter (published after every RLIAC meeting);
- industry meetings (such as the RLIAC coastal tours);
- preparation and distribution of management papers;
- joint meetings with industry leaders;
- correspondence with associations/individuals;
- members attending association meetings;
- surveys; and
- members communicating with their peers.

*Consultation*

Typically, consultation would require that industry is sufficiently informed about proposed management changes - and are allowed a chance to provide ‘input’ on these proposals.

The committee, in arranging industry meetings and communicating with industry, provides the *opportunity* for consultation to take place. However, if industry members choose not to participate in these processes it does not mean that the committee has abrogated its communication/consultation responsibilities.

As the Minister is the one with the power to approve changes to legislation, it is understandable that the *Fish Resources Management Act 1994 (FRMA)* refers to 'consulting' as a Ministerial responsibility.

The degree of consultation that is sufficient in practice would depend on the proposed changes. For example, a minor change may require little, if any, consultation, but a major change may involve extensive consultation. In exceptional circumstances, the necessity to ensure timely changes may not allow for extensive consultation.

Ultimately, the test for sufficient consultation with regard to a particular change/set of changes probably hinges around whether licensees are sufficiently informed about the proposed change and that due consideration is given to their points of view.

The WAFIC rock lobster sub-committee, in August 1997, resolved to request that the Minister:

1. amend the *FRMA* to require the RLIAC to consult with the fishing industry in the same manner as the Minister is required to consult with the RLIAC;
2. agree to formalise the consultative process within the regulations; and
3. agree to the consultative process being the formulation of a three year plan, with an additional year being added each year, so that as each year ends there is still a three year plan in place.

In essence, many of the consultative problems can be overcome if people are suitably informed.

### **1.3.2 Alternative communication/consultation process**

An alternative to the consultation that currently takes place is to develop a regular and formal consultation cycle so that stakeholders are well aware of the consultative opportunities that are available to them. The Minister's position is that management changes are announced by March for the following season (i.e. seven months in advance).

The following proposed consultative cycle is based on that of the WAFIC rock lobster sub-committee. Under this model, provided the announcement made in November is for the season commencing in the following November, the consultative cycle fits well within the Minister's time-frame. If adopted, this consultative cycle would also ensure that the stakeholders were provided a consultation opportunity.

#### *Planning cycle*

- |          |                                                                         |
|----------|-------------------------------------------------------------------------|
| February | • RLIAC meets to consider the latest puerulus count and scientific data |
|----------|-------------------------------------------------------------------------|

- May

- Concept plan developed and released immediately afterwards
  - RLIAC meets to consider submissions from industry and firm-up on the final proposal
  - Final proposal to be released prior to the RLIAC coastal tour;
- September

RLIAC coastal tour

  - Final proposal discussed
  - Issues identified
- October

- RLIAC meets to finalise recommendations to the Minister
  - RLIAC informs Minister of issues it will be addressing next season
- November

- Minister makes announcement on management changes one or more years in advance

#### 1.4 Should RLIAC only concern itself with the biological sustainability of the fishery?

It is accepted by the Minister, industry and Fisheries WA that the *primary* role of the RLIAC is to advise on the sustainability of the western rock lobster fishery. Whether or not this should be the committee's *only* role is an issue that has been raised in recent discussions with industry.

Historically, when considering management proposals for sustainability, the RLIAC has taken into account economic, social and structural impacts. Proposals have often been modified as a result of these considerations.

The arguments for and against the RLIAC only advising on the biological sustainability of the fishery are given below.

FOR	AGAINST
<ul style="list-style-type: none"> <li>• Easy to understand what RLIAC is trying to achieve</li> <li>• Knowledge and expertise exists to manage effectively for biological outcomes</li> <li>• Confidence in achieving targets.</li> </ul>	<ul style="list-style-type: none"> <li>• Marketing and industry structure do have an impact on sustainability, i.e. fishermen driven by market forces.</li> <li>• A risk that social and economic benefits will not be maximised.</li> <li>• Research and modeling will not take into account actual impacts on fishermen.</li> </ul>

- |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Worked well in the past</li> <li>• Assures long term future of the fishery</li> <li>• Focuses discussion on the most important element.</li> <li>• Fits with National Competition Policy (NCP) philosophy, i.e. markets look after themselves.</li> <li>• Legitimate rationale for regulation and licensing.</li> <li>• Should lead to the simplest set of rules.</li> </ul> | <ul style="list-style-type: none"> <li>• RLIAC not in a position to advise the Minister on all issues affecting the fishery.</li> <li>• Decisions will be made without all relevant information.</li> <li>• Some impacts will be ignored (i.e. save fish, but cost fishermen).</li> <li>• Management already in place based on social and economic factors.</li> <li>• Fishermen will push to have socio-economic factors considered by RLIAC.</li> <li>• In reality, the Minister may still seek advice from other users of the resource.</li> </ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Some of the specific issues that could be considered as a result of RLIAC only dealing with the sustainability of the fishery are:

- maintaining the breeding stock;
- resolving resource sharing principles; and
- simplifying the rules - this may include removing those not necessary for maintenance of the breeding stock, eg. maximum and minimum pot holdings, processing restrictions.

### **1.5 Should RLIAC investigate and advise on management changes to bring about structural change in order to maximise the benefits flowing to the industry?**

The management framework for the western rock lobster fishery shapes the structure of its catching and processing sectors. It is possible that some of these regulations are inhibiting the industry from restructuring to maximise the benefits flowing to industry.

The arguments for and against advising on management changes to bring about structural change are given below.

<b>FOR</b>	<b>AGAINST</b>
<ul style="list-style-type: none"> <li>• Can take advantage of opportunities to increase the benefits derived from the fishery</li> </ul>	<ul style="list-style-type: none"> <li>• May mean that the objective of the <i>FRMA</i> to achieve optimum economic, social and other benefits from the</li> </ul>

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Incorporate into the management plan recommendations from NCP that encourage less regulation and more market-driven structures</li> <li>• NCP and other issues will drive change and RLIAC needs to be in a position to provide advice</li> <li>• Existing structure has a major impact on marketing and needs to be fully understood</li> <li>• Quotas versus effort controls is an ongoing issue for the industry</li> <li>• Helps to maintain the industry's competitiveness</li> <li>• Ensures that advice on these issues is not limited to that provided by Fisheries WA to the Minister.</li> </ul> | <p>fishery is not met</p> <ul style="list-style-type: none"> <li>• Market forces will achieve the best outcome and therefore Government should not be involved</li> <li>• Quota versus effort controls has been decided and maybe there is no value in pursuing this issue</li> <li>• Existing structure is effective and restructure may disadvantage fishermen</li> </ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Some of the management issues that could be considered as a consequence of the RLIAC investigating and advising on structural change are:

- the need to change industry practices to increase its competitiveness;
- alternative structures that would improve the benefits derived from the fishery;
- whether management by output controls would provide greater economic benefits;
- the need to change processing regulations;
- rock lobster and puerulus enhancement; and
- increased diversity of management arrangements for Zones A, B and C.

## 1.6 Should RLIAC research and advise on marketing and socio-economic issues?

The objective of the *FRMA* relating to socio-economic issue is:

*To achieve the optimum economic, social and other benefits from the use of the fish resource.*

The specific economic objective for the western rock lobster fishery (Prokop 1997) is:

*That management arrangements adopted would properly take into account market requirements in order to maximise returns to fishermen and the State from an appropriate level of catch.*

There is no specific social objective for the fishery.

In practice, the RLIAC's ability to provide advice on the western rock lobster fishery's economic objective is limited by the extent to which management arrangements can

be identified and assessed in terms of maximising returns to the State and fishermen. The lack of expertise in this area and of cost-benefit analysis of management proposals have been major difficulties in the discussion of recent management options.

As management changes directly affect the profitability of the western rock lobster fishing fleet - because they impact on revenue (catch) and/or operating costs - an understanding of the economics of the fleet and industry is also an important consideration.

Without a specific social objective, it is difficult to know to what extent the RLIAC should be involved in advising the Minister on social issues relating to the western rock lobster fishery. That is, is it appropriate for the RLIAC to be considering issues such as fleet size, vessel operating cost, matters of fleet mobility, occupational health and safety, impacts of management decisions on regional communities and family groups, and employment creation?

In the event that a social issue arises, it is possible that the Minister will seek advice on these matters and, if RLIAC is unable to provide advice on them, the Minister will use other sources, such as Fisheries WA.

The arguments for and against researching and advising on marketing and socio-economic issues are summarised below.

RESEARCH	FOR	AGAINST
<p><b>MARKET</b></p>	<ul style="list-style-type: none"> <li>• Helps ensure economic returns are maximised.</li> <li>• Ensures most impacts are considered.</li> <li>• Broader advice to the Minister.</li> <li>• Helps safeguard fishers viability.</li> <li>• Ensures research and modelling is 'real world', not isolated or insulated from vital considerations.</li> <li>• Essential for product</li> </ul>	<ul style="list-style-type: none"> <li>• No resident expertise, history, research data base.</li> <li>• Variable markets and exchange rates combine to create a high degree of uncertainty about outcomes.</li> <li>• Cost to industry to purchase market research.</li> <li>• There is a risk that 'greed' will dominate over biological sustainability - encourage taking biological risk to get market returns.</li> </ul>

	<p>promotion in:</p> <ul style="list-style-type: none"> <li>- understanding current promotion;</li> <li>- identifying what competitors are doing;</li> <li>- developing strategies to ensure promotion is effective;</li> <li>- evaluating promotion strategies; and</li> <li>- monitoring the industry competitiveness</li> </ul>	
<b>ECONOMIC</b>	<ul style="list-style-type: none"> <li>• Required for an understanding of the affect of management proposals on the profitability of individual fishermen</li> <li>• Needed to monitor the performance of the fishery against the economic objective</li> </ul>	<ul style="list-style-type: none"> <li>• Cost to purchase economic analysis and advice</li> <li>• Economic ‘drivers’ such as price are influenced by exchange rate movements that are unable to be controlled.</li> <li>• Overseas demand curves are difficult to estimate and results are likely to be inconclusive</li> <li>• Fishermen are reluctant to provide economic data</li> </ul>
<b>SOCIAL</b>	<ul style="list-style-type: none"> <li>• Helps to understand the impacts of management proposals on regional employment and communities</li> </ul>	<ul style="list-style-type: none"> <li>• Objectives are often subjective, hard to justify and conflict with economic objectives</li> <li>• Lack of expertise in the area</li> <li>• Cost of purchasing social research</li> </ul>
<b>ALL</b>	<ul style="list-style-type: none"> <li>• Others will provide advice to the Minister on these issues if RLIAC cannot. Advice from others may not reflect fishermens’ views.</li> </ul>	

If the RLIAC were to undertake market, economic and social research, this could enable it to fully consider a number of issues, such as:

- establishing a market and economic research unit;
- increasing the quantity of larger lobsters caught;
- extending the supply period of live lobsters;
- evening out catch flows;
- manipulating the catch between seasons; and
- fleet size.

## PART 2 - MANAGEMENT ISSUES

### 2.1 Sustainability

Providing advice on sustaining the western rock lobster stock is undoubtedly the primary role of the RLIAC. Now that the stock has been rebuilt, it is appropriate that consideration be given to the regulations required to maintain the stock.

A key question is whether the rules introduced to rebuild the stock need to be retained to maintain the stock.

The review being prepared by Fisheries WA's Research Division will assist in the consideration of this issue, but limits the scope of the discussion in the paper because management proposals are dependent on the outcome of the review. Accordingly, the focus of the discussion is on general issues rather than specific proposals.

In formulating management advice in 1993/94, the RLIAC had the following biological objective in mind:

*That the management measures adopted would arrest the ongoing decline in breeding stock and seek to re-establish the number of breeding female rock lobsters to levels consistent with known historic safe levels in the fishery.*

With stock levels now rebuilt to targets set in 1993/94, there has been a shift in focus to maintaining stock levels. The biological objective has been revised accordingly (Prokop 1997), i.e.:

*That the management measures adopted would ensure that the abundance of breeding lobsters is maintained at or above 20-25 per cent of the original unfished parental biomass.*

The combination of major elements of the package introduced in 1993/94 to contain the exploitation rate and rebuild stocks are outlined below.

<b>Element</b>	<b>Purpose</b>
<ul style="list-style-type: none"> <li>• Pot usage</li> <li>⇒ 82 per cent usage</li> </ul>	Reduce the overall catch and contribute to the breeding stock
<ul style="list-style-type: none"> <li>• Minimum size</li> <li>⇒ 77 mm size, 15 Nov. - 31 Jan.</li> <li>⇒ 76 mm size, 1 Feb - 30 Jun</li> </ul>	Reduce catch of 'white' lobsters, i.e. increase lobsters migrating to join the breeding stock
<ul style="list-style-type: none"> <li>• Setose tar-spot</li> <li>⇒ Protect setose and tar-spot</li> </ul>	Reduce catch of breeding females and increase egg production
<ul style="list-style-type: none"> <li>• Maximum size of females</li> </ul>	Increase the year classes contributing to egg production and provide a buffer to the effects of

⇒ 115 mm, Zone C	poor recruitment
⇒ 105 mm, Zones A & B	

Given the 1997 biological management objective of maintaining the breeding stock and in light of the review that is taking place, the current management package may require some adjustment to compensate for:

- a possible excessive build up of breeding stock beyond target levels;
- ongoing increase in exploitation rates due to increases in fishing efficiency, i.e. due improvements in technology.

In considering proposed changes, the following factors would be of relevance:

- The elements of the existing package that are most effective in maintaining the breeding stock.
- The need for ongoing regulations to limit the capacity of the fleet to increase efficiency.
- The effect that changes in fishing patterns may have on the breeding stock.
- The long term environmental changes that may affect the long term productivity of the stock.

Ideally, as part of the review of proposed changes, a risk analysis would be undertaken to assess the likelihood that the breeding stock may fall below targets.

Should the review indicate that the net effect of the current package is an excessive breeding stock, then the following management changes could be considered to adjust the breeding stock level:

- increase the average level of pot usage;
- remove the maximum size for females; and
- introduce a variable maximum size at which the setose regulations no longer apply.

On the other hand, if breeding stocks are lower than targets or declining, the following regulation changes could be used to increase the breeding stock:

- small decrease in pot usage, which could be applied annually or at longer intervals;
- further increase in minimum size of captured lobsters during the 'whites' season;
- shorter fishing season or short term closures during the season; and
- reduction in the maximum size for females.

The choice of the best regulatory change could be considered in the context of a number of questions, eg.:

- How does the change affect the overall catch?
- How does the change affect the supply pattern?, i.e. what is the effect on 'whites' and 'reds' peaks?

- How does the change affect fishermen's operating costs?
- Is the change equitable within and between zones?
- What is the likely effect of the change on the grade composition of the catch, i.e. does it lead to more larger lobsters?
- How does the change affect compliance and enforcement costs?
- What are the risks that the change may not lead to the outcome required and breeding stocks will not be maintained?

Other factors that have been mentioned in discussions with fishermen that may have an influence on the regulatory approach used are discussed below.

Removing the maximum size rule has been proposed by some fishermen on the basis that an increased proportion of large animals is likely to limit the availability of habitat for smaller lobsters. If space is a limiting factor, then it is possible that there is a larger mortality of smaller animals because they cannot compete for habitat with the larger animals.

The RLIAC, in recent advice to the Minister, has indicated a preference for the use of pot reductions (in combination with gauge changes) to achieve a reduction in catch principally because it:

- has the potential to reduce fishing costs;
- is equitable in the sense that it can be applied equally to all licensees;
- can be easily targeted for specific times;
- will have a minimal effect on the catch composition; and
- is relatively easy to check compliance and involves no major change to existing legislation.

### ***Outcome to consider***

- ◆ The abundance of breeding lobsters is maintained at around that of the late 1970s and early 1980s, i.e. above 20 - 25 per cent of the original unfished parental biomass.

### ***Possible actions***

- ◆ Dependent on the results of the review, possible actions could involve changes to the following rules:
  - pot usage;
  - setose tarspot;
  - minimum size; and
  - maximum size.

## **2.2 Resource Sharing**

Resource sharing is relevant to the biological objective for the western rock lobster fishery because the catch is taken by two sectors - commercial fishing and recreational fishing.

The commercial sector has a limit on the number of licences, while the recreational sector does not. Therefore, without a cap on the number of licences, there is the potential for the recreational catch to increase to the extent that it:

- changes the catch shares in the western rock lobster fishery; and
- impacts on the sustainability of the stock.

Primarily, a recreational rock lobster licensee's catch is limited by the number of pots they can use and bag limits. Most of the rules relating to minimum and maximum sizes and the protection of setose and tarspot lobsters are the same for both sectors.

A recent survey for the 1997/98 season shows that the catch of the recreational sector has increased in proportion to the commercial sector. Until there is an upper limit on the number of licences issued - or some other controls introduced - this situation could continue.

The RLIAC acknowledges that the resource is shared between the recreational and commercial sectors. However, it is important that catch sharing principles be established to assist with the resolution of differences.

Under the *FRMA*, the RLIAC has a statutory function to advise the Minister on rock lobster fishing. Rock lobster fishing could be interpreted to include recreational rock lobster fishing. However, under the *FRMA*, the Recreational Fishing Advisory Committee (RFAC) also has a statutory function to advise the Minister on issues relating to recreational fishing and management of recreational fishing.

A RLIAC/RFAC liaison group has been formed to forge stronger ties between the two sectors and would be the appropriate forum to develop resource sharing principles and management advice.

### ***Outcome to consider***

- ◆ Regulation of both sectors under agreed resource sharing principles

### ***Possible actions***

- ◆ Joint RLIAC/RFAC liaison group to develop resource sharing principles

## **2.3 National Competition Policy (NCP)**

The NCP review of fisheries legislation has the potential to lead to structural change in the fishery. Generally, the overriding NCP principle is that in most cases competition will lead to the most efficient industry structure.

Under the National Competition Principles agreement, signed in April 1995, agencies responsible for fisheries management in Australia have been committed to reviewing their legislation and regulations before 2000. The rock lobster catching and processing sectors are subject to review as part of this process.

The purpose of the reviews are to:

1. ascertain if regulations restrict competition and, if so, whether the benefits of the restriction outweigh the costs; and
2. consider whether the objectives of the legislation can be achieved by means other than restricting competition.

***Outcome to consider***

- ◆ Management plan consistent with NCP principles

***Possible action***

- ◆ Amendment to the rules as required

## **2.4 Input versus output controls**

The alternative to administrators intervening under the existing management framework to bring about changes to increase benefits is to introduce a management system (eg. quotas) that in itself has the potential to create the right conditions for economically efficient outcomes. In this way, the industry can restructure itself rather than managers forcing changes under an input control system.

The regulatory techniques used under the current management plan have been very successful in achieving the 1993/94 fishery biological objective. If this is the *only* objective RLIAC needs to consider for the fishery, then there is probably not a persuasive argument to change the management approach.

However, if the objectives for the fishery are to include management for the purposes of optimising returns, then there may be a better regulatory arrangement. Lindner (1994) has indicated that the current arrangement leads to 'capital stuffing' and that this significantly lowers the return from the fishery.

Ideally, the regulatory techniques used would provide the degree of flexibility to respond to changing market preferences without resorting to lengthy consultative

processes and undue exposure to the political system, while maintaining the biological objective for the fishery.

The fundamental issue in this regard is whether the current system can be modified to give a desired outcome or whether there is a need for fundamental change to the regulatory arrangements.

Of particular difficulty under the current system is the degree of intervention required to meet market requirements. Because of the diverse nature of fishing, it is almost impossible to introduce rules that apply equally (in terms of catch) to all persons because of differences in fishing strategies.

It might be agreed that changing pot usage might be the most equitable technique under the current arrangements, but its effect will vary from fisherman to fisherman, depending on their particular fishing pattern.

The three major obstacles most commonly discussed in terms of moving to an output-based management system are the:

- high compliance cost of a quota system;
- difficulty in the initial allocation of quota entitlement; and
- concern that it will lead to a concentration of ownership with processors.

It would be interesting to review the cost of compliance in the light of the two systems now operating together in the South Australia rock lobster fishery and the experience of the Tasmanians and New Zealanders in managing their rock lobster fisheries.

Allocation is a very difficult issue to resolve because of the differences in the historical catches between fishermen. Probably the only workable solution is to base the allocation on pot entitlement.

However, this solution would not equate to average historical catch. The recent experience in Tasmania was that catch history was taken into account in the allocation of entitlements by setting aside a portion of the quota over a period of time (five years) for those boats that had historically taken above-average catches.

It has been said that a potential undesirable outcome of a quota system is that eventually the ownership of quota would be concentrated with processors. This seems to be because processors would have a greater control over the operations of the fleet under a quota system.

The New Zealand experience has been that processors do own a large proportion of the entitlements. Whether or not this is beneficial for the fishery is arguable, certainly a person selling an entitlement would have an expectation that they would be able to sell their entitlement to the person/s with the greatest willingness to pay.

### ***Outcome to consider***

- ◆ Most effective/efficient/flexible management plan

**Possible action**

- ◆ Review/update the findings of the 1993/94 reports on the advantages and disadvantages of introducing output controls

## **2.5 Rock Lobster Enhancement**

Rock lobster enhancement has the potential to significantly change the structure of industry. Proposals for a regulatory framework are contained in the discussion paper *Opportunities for holding/fattening/processing and aquaculture of western rock lobster* (Fisheries Management Paper No. 122). The RLIAC took the lead role in the development of the paper and will be providing advice on this issue during, and after, the public comment period.

Although the Aquaculture Development Council (ADC) has a statutory function to advise the Minister on aquaculture, the Minister is considering whether a joint RLIAC/ADC committee should report to him directly on rock lobster aquaculture and enhancement. This may provide a more coordinated approach to providing the Minister with advice on rock lobster enhancement and aquaculture.

There are two programs running concurrently in the development of rock lobster enhancement. One is the research program aimed at determining the viability of rock lobster enhancement, while the other program is aimed at developing the policy framework for rock lobster enhancement.

Research is coordinated nationally by the Fisheries Resource Development Corporation (FRDC) rock lobster aquaculture and enhancement sub-program. Western Australia has three representatives on the sub-program's steering committee. The philosophical approach to research adopted by WA is to build sequentially on the knowledge gained through research projects.

The western rock lobster puerulus enhancement three year project is a step in this direction. The program aims to:

- determine the availability of pueruli in excess of the wild capture fishery requirement (biological neutrality);
- improve the understanding of puerulus mortality rates;
- establish the health of the pueruli;
- investigate techniques for capturing large (commercial ) quantities of pueruli; and
- establish cost effective methods of transport to on-growing farms.

Until the results of the research program are available, the long term future of the development of post-harvest puerulus enhancement cannot be determined.

The development of rock lobster enhancement is being progressed in a number of different ways, both nationally and at a State level. Accordingly, there is a need to coordinate rock lobster enhancement research and policy development.

The RLIAC is well positioned to carry out a coordinating function because it has:

- a statutory function to advise on rock lobster fishing;
- ready access to industry;
- the appropriate infrastructure to support sub-committees incorporating all interested groups, eg. aquaculture/recreational fishing.

### ***Outcome to consider***

- ◆ Puerulus enhancement adding value to the whole of industry

### ***Possible actions***

- ◆ The RLIAC coordinating puerulus enhancement in WA
- ◆ Research the biological neutrality of any use of rock lobster pueruli on the wild capture fishery
- ◆ Research the large scale collection of puerulus
- ◆ Research grow-out techniques

## **2.6 Large lobsters attracting higher prices**

Until recently, the market preference for small size lobsters coincided with the peak production of small animals (72 % of the catch is small grade lobster). However, the recent trend has been for a stronger demand for larger lobsters from emerging markets such as China. The production of large lobster is very small and will remain so unless management rules are changed.

Changing the catch size composition to produce more larger lobsters is a long term strategy, as it would take some time for the stock to stabilise at a different population structure - to get more larger lobsters to catch, you need to catch fewer smaller lobsters for a few years. For example, as a result of the 1993/94 package there are more lobsters available now.

There is also a risk that by the time the desired lobster size 'outcome' is reached, market preferences may have changed again. Nonetheless, an appropriate time to undertake such a strategy is when there is a peak in the catch, because decreasing the numbers of lobsters caught is less likely to impact on earnings.

### ***Outcome to consider***

- ◆ Increase flow of animals to larger sizes

***Possible action***

- ◆ Decrease the exploitation rate of the smaller lobsters by:
  - Increasing the gauge for all or part of the season
  - Decreasing pot usage in periods of peak catch

## **2.7 Continuity of supply of live lobsters**

Overseas buyers have indicated that they want to buy western rock lobster year round. These buyers turn to alternative sources (competitors) for live lobster when supplies are not available from Western Australia.

The lack of supply of live lobster is regarded by buyers as a major shortcoming in marketing western rock lobster. The fishery would presumably benefit if it was able to supply live lobsters year-round.

Supplying live lobsters over the off-season was identified by Monaghan (1997) as a proposal that may lead to the increased worth of the catch, because a proportion of it could be sold at a higher price (live). However, off-season fishing was also being proposed as a method of smoothing the catch (either bringing catch forward or delaying the catch).

Ciciriello (1998) has reported that an additional 400 - 460 tonnes of live lobster could be absorbed by the industry's traditional markets if the fishing season were extended. The difficulty with this proposal is that fishing the off-season would increase fishing costs and, as yet, there has been no cost benefit analysis. This was the main reason off-season fishing was proposed on a trial basis.

As an alternative to fishing the off-season to improve the continuity of supply, it has been suggested by some fishermen that stocks of live animals could be built up during the season by holding them in storage tanks. This stock could then be used to supply markets when fishing is not taking place.

Processors have reported that although technologically possible, storing large quantities of live lobsters long-term would not be profitable (Donohue 1998).

***Outcome to consider***

- ◆ Year-round supply of live lobsters.

***Possible actions***

- ◆ Analyse the options for achieving a year-round supply of live lobsters
- ◆ Improve the understanding of the economics/technology of long-term holding of live lobsters

## 2.8 Within-season product flow

Because most of the western rock lobster catch is taken over two short periods, processors have to expand their capacity to handle the catch at that time. This may mean processors are under-utilising their capacity at other times of the year.

Also, these peak flows may not coincide with peak seasonal demand for lobster and put pressure on processors to sell when the supply is greatest - a situation which overseas buyers can use to their advantage. A more even flow would avoid some of these infrastructure and marketing problems.

As Monaghan (1997) points out, the industry has evolved around marketing a commodity that is delivered rather than ordered and there are potential gains from aligning production with periods of increased demand or increasing the production of higher value products.

Under current fishing patterns, there are two peaks in production and there is no live product available for three and a half months (i.e. during the season closure). Where demand is already being met and there is no differential in product prices, there is probably not much economic gain to be made by changing the production schedule.

On the other hand, if there is a difference in value for products, i.e. cooked compared with live and/or 'white' compared with 'red', there maybe some gains to be made by changing the catching pattern. Changing the within-season supply pattern may be most advantageous to smaller processors, as they would be able to increase the sales of higher valued products because of the possibility that they may be under supplied in some product lines at certain times of the year.

The two largest processors are always likely to have an excess availability of live lobsters.

At this stage there is no analysis available on what contribution changing the product flow may make to the financial return to the fishery.

### ***Outcome to consider***

- ◆ More even product flow within the season

### ***Possible actions***

- ◆ Analyse the options to achieve a more even product flow which could include:
  - zones with different start dates;
  - quotas in high production periods;
  - increase the minimum size of captured lobsters;
  - pot reductions in peak periods;
  - closures during peak months; and

- trade-off between peak periods and off-season fishing

## **2.9 Manipulating the catch between seasons**

The variability in the western rock lobster catch between seasons also causes some marketing difficulties, as processors are selling into well established markets that value a continuity of supply and stable price. Variable production can cause unnecessary disruption to the marketing of western rock lobster and is avoidable by smoothing the catch between seasons.

This issue relates to whether there is a benefit in restricting supply in seasons where the catch is above average, to give a more even production. In practice, it involves moving the catch from one season to another, as discussed by Monaghan (1997). Management options for manipulating the catch are provided in Fisheries Management Paper 113, Donohue (1998).

Fluctuating catches are nothing new to the western rock lobster fishery, particularly in Zone C. This would normally not be an issue in periods of average to below average catches. However, during above average catch periods, the possibility arises that there may be a benefit to the fishery in either catching some of the stock earlier or delaying capture.

Given current catch predictions and that there will no change to the 1998/99 management arrangements, the manipulation of the catch is primarily relevant to the 1999/2000 season. After that season, with the prediction that catches will return to about average, the potential benefits from manipulating the catch may be reduced.

Theoretically, whether there is a benefit to be gained by manipulating the catch between years is very much dependent on the demand for western rock lobster.

As illustrated very simplistically in Table 1 (and assuming that there is no increase in fishing costs) it is evident that catching more does not necessarily result in increased payments. In practice though, there are many factors to consider in manipulating the catch to increase the benefit to the fishery including:

- how the stockpile is disposed of in the future;
- the quantity to move between seasons;
- the considerable amount of uncertainty about price movements;
- discount rates;
- the possibility that the size composition of the catch may change;
- stock dynamics;
- exchange rate movements; and
- different effects in different zones, i.e. Zone C catch predicted to increase more than Zones A and B.

As outlined above, this is a very complex issue. Fisheries WA Research Division's Value Optimisation Model (VOM) computer modelling software may help in this regard as it will allow a better analysis of the biological affects and some ability to investigate different price movement scenarios, but there will still be considerable uncertainty about the long term benefits.

Given the current catch predictions, it may be feasible to decrease the 1999/2000 catch by 1,500 tonnes and increase the 2000/2001 catch by 1,500 tonnes, thereby averaging the catch over two years at about 12,500 tonnes. This change could avoid any long term problems encountered in building up stocks - or it may just result in a short term build up of stocks.

The RLIAC has previously advised the Minister to approve the following types of management changes to manipulate the catch:

- 70 per cent pot usage 15 November to 30 April;
- 82 per cent pot usage 1 May to 30 June;
- 77 mm minimum size for captured lobsters all year;
- Remove protection for oversize non-setose females 5 Jan. to 31 Jan., 1 Apr. to 30 Jun. (i.e. those above 105mm in Zones A and B, and above 115mm in Zone C).

At the workshop on 16 September, industry did not support the RLIAC recommending that the catch be manipulated within and between seasons, until there is sufficient information and analysis to justify such a proposal. The Minister has indicated in a letter to all rock lobster licenses that until there is a demonstrated need for change, he is prepared to roll over the existing management package for the rock lobster fishery.

Adoption of the industry position by the RLIAC would shift the latter's focus, at least in the short term, principally to providing sustainable management for the western rock lobster fishery, but could leave the industry facing significantly lower prices over the next two seasons.

***Outcome to consider***

- ◆ Sufficient cost and benefits analysis to justify a change to the management package

***Possible actions***

- ◆ Thorough economic analysis of the benefits from manipulating the catch be undertaken

## **2.10 Adequacy of product promotion**

Processors, as sellers, individually undertake product promotion. What limited resources that are invested in promotion mostly goes towards processors promoting their own products and brands, but on occasion promotion is undertaken collectively.

This situation may not serve the best interests of the whole of industry. On the other hand, generic promotion could provide a benefit to all, while not detracting from individual processor's marketing strategies. The key issue is how the industry goes about ensuring that there is sufficient investment in product promotion.

The funding of product promotion has proved to be an issue for processors because benefits from promotion mostly flow to the harvesting sector, i.e. processors other than matching payments made to fishermen by other processors may not receive much of a return for their investment. In addition, the level of funding needed for an effective promotional campaign could be in the order of \$1 million.

Industry leaders have acknowledged the lack of product promotion and are developing an approach to deal with this issue. The indications are that an industry position on this matter will not be finalised until at least the 1999/2000 season.

There is no certainty about the outcome of the industry initiative and a risk that further delay in product promotion could have a long term detrimental effect on the premium product status of western rock lobster. This raises the issue as to whether some immediate action should be undertaken to promote western rock lobster while an industry position is being developed.

***Outcome to consider***

- ◆ Increased investment in product promotion

***Possible action***

- ◆ Industry establish and develop marketing research/product promotion body

## **2.11 Fleet size**

One issue that has social implications which RLIAC has been considering for some time is related to the western rock lobster fishing fleet size, i.e. a licence re-activation policy. A shrinking fleet size has a social impact because of the affects a smaller fleet will have on regional communities along the coast.

The licence re-activation policy was originally intended to develop a mechanism that would allow the fleet to expand to a maximum (of around 600 boats), whereas currently each time a fisherman sells all his pots the fleet will shrink as a result.

Recently, fishermen have requested that the RLIAC consider a mechanism that would allow a licensee to retain their Fishing Boat Licence and Managed Fishery Licence when they temporarily transfer their pot entitlement. The RLIAC has provided advice to the Minister that would essentially meet most of the requirements of industry.

***Outcome to consider***

Fleet size able to expand to a maximum, and licensees able to temporarily retain their MFL and FBL while holding less than the minimum number of pots.

***Possible action***

Implement licence re-activation policy.

### **3.0 SUMMARY**

This paper is divided into two parts - the first discussing RLIAC's role, operation and advice issues and the second reporting on management issues identified at a joint industry workshop.

Six key questions are proposed in Part One - three of these concern the RLIAC's role and operation and three concern the advice it provides. The intent of these questions are to foster industry discussion and assist the RLIAC in resolving the types of issues it will be dealing with in the future.

Ten management issues identified at the joint industry workshop held in September 1998 are presented in Part Two and some background to each of these issues is provided. Additionally, outcomes and possible actions are provided to assist in the consideration of each issue and these are summarised in Table 2.

Following discussion of these issues with industry, the RLIAC will be in a position to determine its future direction.

## **4.0. REFERENCES**

Donohue, K. 1998, Western Rock Lobster Management - Options and Issues, Fisheries Management Paper No. 113, Fisheries Western Australia, Perth.

Lindner, B. 1994, Long Term Management Strategies for the Western Rock Lobster Industry (four volumes): Economic Efficiency of Alternative Input and Output-Based Management Systems in the Western Rock Lobster Fishery (October 1994), Vol.2, Fisheries Management Paper No. 68, Fisheries Department of Western Australia, Perth.

Marec Pty Ltd. 1997, Optimising the Worth of the Lobster Catch: Options and Issues, Fisheries Management Paper No. 101, Fisheries Department of Western Australia, Perth.

Prokop, F. 1997, Management Arrangements for the Western Rock Lobster Fishery for the 1997/98 season, Fisheries Management Paper No. 94, Fisheries Department of Western Australia, Perth.

**Table 1: Landed catch value for combinations of price and volume**

		<b>1998/99 Returns (\$ millions) to Fishermen by Beach Price by Catch Catch (millions kgs)</b>								
		<b>14.0</b>	<b>13.5</b>	<b>13.0</b>	<b>12.5</b>	<b>12.0</b>	<b>11.5</b>	<b>11.0</b>	<b>10.5</b>	<b>10.0</b>
<b>Price \$</b>	<b>20</b>	\$280	\$270	\$260	\$250	\$240	\$230	\$220	\$210	\$200
	<b>19</b>	\$266	\$257	\$247	\$238	\$228	\$219	\$209	\$200	\$190
	<b>18</b>	\$252	\$243	\$234	\$225	\$216	\$207	\$198	\$189	\$180
	<b>17</b>	\$238	\$230	\$221	\$213	\$204	\$196	\$187	\$179	\$170
	<b>16</b>	\$224	\$216	\$208	\$200	\$192	\$184	\$176	\$168	\$160
	<b>15</b>	\$210	\$203	\$195	\$188	\$180	\$173	\$165	\$158	\$150
	<b>14</b>	\$196	\$189	\$182	\$175	\$168	\$161	\$154	\$147	\$140
	<b>13</b>	\$182	\$176	\$169	\$163	\$156	\$150	\$143	\$137	\$130
	<b>12</b>	\$168	\$162	\$156	\$150	\$144	\$138	\$132	\$126	\$120
	<b>11</b>	\$154	\$149	\$143	\$138	\$132	\$127	\$121	\$116	\$110
	<b>10</b>	\$140	\$135	\$130	\$125	\$120	\$115	\$110	\$105	\$100

NOTES: 1997/98 Catch value estimated to be \$208 million, i.e. 10.4 million kgs @ \$20/kg  
 \$140 Combinations of price and catch with a value less than the 1997/98 catch value of \$208 million

**Table 2: Summary of management issues, outcomes to consider and possible actions**

MANAGEMENT ISSUES	OUTCOMES to CONSIDER	POSSIBLE ACTIONS	
		Possible Management Plan Changes	Other
SUSTAINABILITY	<ul style="list-style-type: none"> <li>The abundance of breeding lobsters is maintained around that of the late 1970s and 1980s, i.e. at or above 20 - 25% of the original unfished parental biomass</li> </ul>	<ul style="list-style-type: none"> <li>Setose/tar spot</li> <li>Pot usage</li> <li>Minimum size</li> <li>Maximum size</li> </ul>	<ul style="list-style-type: none"> <li>Review five year plan</li> <li>Discuss review with industry in Jan. 1999</li> </ul>
RESOURCE SHARING	<ul style="list-style-type: none"> <li>Regulation of both sectors under agreed principles</li> </ul>	<ul style="list-style-type: none"> <li>Subject to review and discussion</li> </ul>	<ul style="list-style-type: none"> <li>Joint RLIAC/RFAC liaison group to develop policy advice</li> </ul>
NATIONAL COMPETITION POLICY (NCP)	<ul style="list-style-type: none"> <li>Regulations consistent with NCP principles</li> </ul>	<ul style="list-style-type: none"> <li>Subject to review and discussion</li> </ul>	<ul style="list-style-type: none"> <li>NCP review</li> </ul>
INPUT VERSUS OUTPUT CONTROLS	<ul style="list-style-type: none"> <li>Most efficient/effective flexible management plan</li> </ul>	<ul style="list-style-type: none"> <li>Subject to review</li> </ul>	<ul style="list-style-type: none"> <li>Review/update the findings of the 1993/94 reports on the advantages and disadvantages of introducing output controls</li> </ul>
ROCK LOBSTER ENHANCEMENT	<ul style="list-style-type: none"> <li>Puerulus enhancement adding value to the whole of industry</li> </ul>	<ul style="list-style-type: none"> <li>Subject to review and discussion</li> </ul>	<ul style="list-style-type: none"> <li>The RLIAC coordinating puerulus enhancement in WA</li> <li>Research the biological neutrality of any use of rock lobster pueruli on the wild capture fishery</li> <li>Research the large scale collection of puerulus</li> <li>Research grow-out techniques</li> </ul>
LARGE LOBSTERS ATTRACTING HIGHER PRICES	<ul style="list-style-type: none"> <li>Increased flow of animals to larger sizes</li> </ul>	<ul style="list-style-type: none"> <li>Increase the minimum size for captured lobsters for all or part of the season</li> <li>Decrease pot usage in periods of peak catch</li> </ul>	

CONTINUITY OF SUPPLY OF LIVE LOBSTER	<ul style="list-style-type: none"> <li>• Year-round supply of live lobsters</li> </ul>	<ul style="list-style-type: none"> <li>• Analyse the options for achieving a year-round supply of live lobsters</li> </ul>	<ul style="list-style-type: none"> <li>• Improve the understanding of the economics /technology of the long term holding of live lobsters</li> </ul>
WITHIN SEASON PRODUCT FLOW	<ul style="list-style-type: none"> <li>• More even product flow within the season</li> </ul>	<ul style="list-style-type: none"> <li>• Zones with different start dates</li> <li>• Quotas in high production periods</li> <li>• Increase minimum size for captured lobsters in peak periods</li> <li>• Pot reductions in peak periods</li> <li>• Closures during peak months</li> <li>• Trade-off between peak periods and off season fishing</li> </ul>	
MANIPULATING THE CATCH BETWEEN SEASONS	<ul style="list-style-type: none"> <li>• Smoothing the catch between seasons</li> </ul>		<ul style="list-style-type: none"> <li>• Thorough economic analysis of the costs/ benefits from manipulating the catch be undertaken</li> </ul>
PRODUCT PROMOTION	<ul style="list-style-type: none"> <li>• Increased investment in promotion</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Industry establish and fund marketing research and product promotion body</li> </ul>
FLEET SIZE	<ul style="list-style-type: none"> <li>• Fleet able to expand to a maximum, and licensees able to temporarily retain their MFL and FBL while holding less than the minimum number of pots</li> </ul>		<ul style="list-style-type: none"> <li>• Develop licence re-activation policy</li> </ul>