

VALUE CHAIN PROFITABILITY (56% OF CRC BUDGET)

- PRODUCTION AND PROCESSING INNOVATION

Market requirements

To develop a code of practice for handling of WRL 1996
Rocklobster post-harvest program: Code of practice for handling lobster 2002
Improved onshore storage and transportation protocols for the WRL 1990
Airfreight of live seafood: Improved packaging system for live WRL 1994
Condition and its assessment in the SRL: condition indices and moult staging techniques 1995
Condition and its assessment in the SRL: field application of the techniques for condition assessment developed in the laboratory 1996
Reducing post-capture mortality when storing tropical rocklobsters for live export 1997
Physiological investigation into methods of improving post-capture survival of SRL & WRL 1998
Physiological studies of stress & morbidity during post-harvest handling of WRL 1996, 2001
Rocklobster post-harvest program: optimising water quality in RL post-harvest processes 2002
Best practice in the SRLI 2004

Consumption drivers and barriers

Economic surveys 1964, 1970, 1974, 1981
Market situation & outlook report 1974, 1980, 1989
Economic study of SRLF 1991, 1996
Development of a USA marketing strategy for WRL tails 1994
Evaluation of factors influencing prices of domestic seafoods 1995
Economic study of VRLF 1996
Developing mechanisms for the transfer and/or adjustment of rocklobster shares between sectors in WA and SA 2007
Informing and capitalising on seasonality of Australian caught seafood 1994
A study of seafood consumption in Perth and the development of a guide to targeted promotion 1999
Hooking into Asian festivals 1999
Hooking into Asian seafood markets 1999

Processing

Rocklobster post-harvest program: examination of green sustainable process technology for preparing chitin and associated derivatives from rocklobster waste 2006

Best practice in the WARLI 2004

Rocklobster post-harvest program: Striking a balance between melanosis and weight recovery in the WRL 2005

Rocklobster post-harvest program: evaluation of alternative processing technologies applicable to crustaceans 2005

- VALUE CHAIN TECHNOLOGIES AND PROCESSES

Production systems-wildstock

Complete automation of current processing methods –

Set the standard in processing technology

maximise product quality

address labour shortages

new value-adding technologies (Nitrogen fixation of split tails)

Sea-based live holding of SRL: long term holding & feeding 1999

Reducing peaks and troughs in landings through crofting, feasibility study on economic returns to the WRLF

Production systems-aquaculture

Bioeconomic development of long-term holding and aquaculture of SRL 1996

Development of RL propagation techniques for aquaculture in AUS 2001

RL enhancement & aquaculture subprogram: feed development for RL aquaculture 2001

RL enhancement & aquaculture subprogram: facilitation, administration and promotion 1998

RL enhancement & aquaculture subprogram: determination of optimum environmental & system requirements for juvenile & adult RL holding & grow-out 2001

RL enhancement & aquaculture subprogram: establishing techniques for large scale harvesting of pueruli and obtaining a better understanding of mortality rates 2003

RL enhancement & aquaculture subprogram: establishing post-pueruli growout data for WRL to assess economic viability 2003

RL enhancement & aquaculture subprogram: evaluating the release & survival of juvenile RL released for enhancement purposes 2004

RL enhancement & aquaculture subprogram: investigation of tail fan necrosis in live-held adult SRL 2004

Reducing RL rearing time through hormonal manipulation 2005

RL enhancement & aquaculture subprogram: the feasibility of translocating TRL for increasing yield 2005

RL enhancement & aquaculture subprogram: health assurance of SRL 2006

Matters relevant to the development of a sustainable allocation and grow-out model for WRL pueruli: a scoping paper 2006

Production methods-improving efficiency of wild-harvest technology
Feasibility study for the use of biofuel for the WRLF 2007

Follow-up biofuel study

Lobster steaming 2000

Increased economic efficiency for the WRLF through improved pot design 2007

Season long pot design trials will follow pilot phase trial ending 12/07

Measuring foraging range of WRL and effective fishing area of a baited pot 1987

Rocklobster post-harvest program: development of bait saving strategies for the WRLF 2006

Bait saving technologies for the WRLF

Holding baits (hairless hide)

Baitsavers etc etc.

Rocklobster post-harvest program: strategic planning, project management and adoption 2003

Rocklobster post-harvest program: Effect of cold-water stunning on the survival & growth of caught and returned WRL 2004

Rocklobster post-harvest program: Development of a method for alleviating leg loss during post-harvest handling of RL 2004

Rocklobster post-harvest program: Quantifying & controlling hyper- and hyposaline induced post-harvest leg autotomy in the WRLF 2004

Improved onshore storage and transportation protocols for the WRL 1990

Airfreight of live seafood: Improved packaging system for live WRL 1994

Investigation on the usage and stock assessment of bait fishes in southern and eastern Australian waters, with special reference to pilchards 1994

Stock structure of northern and western Australian Spanish mackerel 1998

Development of a dry, pathogen free, water stable, lobster bait – investigation into operational parameters 2000

Chemoattraction and development of an artificial bait for the WRLF 2000

Off-season trial of artificial RL baits 2001

PRODUCT QUALITY AND INTEGRITY (16% of CRC budget)

- SUPPLY CHAIN MANAGEMENT TECHNOLOGIES

Development of a national approach to seafood quality (SeaQual) 1995

Evaluating effective quality monitoring methods for the Australian seafood industry

New approaches to seafood retailing

- TECHNICAL MARKET ACCESS

Global lobster market database 2006

Follow up to database to identify potential markets – consultant?

-local and overseas markets

-during season, off-season

HEALTH BENEFITS OF SEAFOOD (4% of CRC budget)

- *Clinical nutrition of seafood*

Enhanced usage of contemporary scientific findings on health benefits of seafood to promote fresh seafood consumption

- *Nutrigenomics*
- *Comparative toxicokinetics of chemical contaminants in seafood*
- *Allergens and intolerance as a barrier to seafood consumption*

DESCRIBE THE EDUCATION AND TRAINING PROGRAMME (7% of CRC budget)

- *Research education and training*
- *Industry skills and capacity*

NATURAL RESOURCE SUSTAINABILITY

Predation of WRL by octopus 1977
A study of the amateur fishery for WRL 1979
Examination of methods used for handling undersize WRL 1987,
A study of fishery induced mortality of undersized WRL 1981
Studies on the breeding stock of WRL in relation to stock and recruitment 1988
Habitat requirements of post-juvenile stocks of WRL 1989
Effect of water temperature on growth, recruitment and breeding cycle of WRL 1990
Behavioural & physiological studies of phyllosoma larvae of the WRL 1990
Assessment of spatial and temporal variation in juvenile settlement in SRL 1994
Effects of seasonal and inter-annual variability of the ocean environment on recruitment to the fisheries of WA 1994
Big Banks region of the WRLF 1994
Fishery independent study of spawning stock of the WRLF 1996
Synthesis of existing data on larval SRL distribution 1996
Assessment of broad-scale exploitation rates and biomass estimates for the TasRLF 1997
Fishery independent study of the breeding stock and migration in the WRLF 1998
Mortality, growth & movement of the WRL 1999
Assessing short-term movements of WRL by analysis of Carbon and Oxygen isotope ratios in their skeleton 2002
Sustainability of the WRLF: past progress and future challenges 2003
Modelling WA fisheries with techniques of time series analysis 2003
A preliminary study on the dynamics of recreational fishing in the WRLF for use in IFM 2005
SRL R&D plan and subprogram development 2005
Assessing the possibilities for the natural settlement of the WRL 2007

MSC review research directions – NON CRC PRIORITIES

Although information on many of the factors affecting the fishery-dependent data is available, no **estimates of effective effort** appear to have been calculated in recent years.

A comprehensive, **computer-stored collection of the papers** and reports related to Western Rock Lobster should be developed to facilitate future research.

Reference points and the decision rule framework need to be revised such that they recognize the uncertainty that is present within data and the results of stock assessment and take this **uncertainty** into account. It is strongly recommended that a more clearly articulated and precise set of objectives, reference points and harvest strategy/decision rule framework is developed, and that the key reference points are defined in terms that relate to stock status and fishing mortality, are consistent with Accepted international standards and are expressed in probabilistic terms such that they can accommodate the uncertainty associated with estimates

of the values of indicator variables, *e.g.* “the probability that the fishery independent index of egg production falls below the 1980 level should not exceed 30%”.

Determine effective effort and examine trends in catchability

Present detailed descriptions and results (including standard errors, confidence limits or error distributions) of historical and recent studies of **factors influencing catchability and thus influencing the effectiveness of fishing effort.**

It would be useful to consider comparing estimates of **total nominal effort** derived from logbook data with those reported in the mandatory monthly returns to assess whether there are trends in average soak time or other fishing or recording practices that would produce bias in the estimates of annual fishing

The collection of **recreational catch and effort data** should be described in the technical report of the stock assessment and included in the assessment.

Values of annual effective effort within each management zone, calculated from nominal effort by adjusting for factors known to influence efficiency of fishing effort, such as spatial distribution, temperature, swell, soak time, etc., should be presented in a technical report of the stock assessment.

Proposed impact of Emissions trading scheme on WRLF– preparing for the inevitable (cannot be ignored after 2012!)

-Abatement techniques *i.e.* biofuels, 2-days soaks, less boats, larger, more efficient pots, crafting (live holding of lobster to offset peaks in catches)

ECOSYSTEM PROTECTION

Ecology of coastal reefs: the nurseries of juvenile WRL 1979

Mesoscale oceanographic data analysis and data assimilative modelling with application to WA fisheries 1997

Evaluating the effectiveness of MPA’s as an effective management tool 1999

A coordinated commercial fishing industry approach to the use of MPA’s 1999

Towards an assessment of natural and human use impacts on the marine environment of the Abrolhos Islands – Phase 1: data consolidation and scoping 2001

The effects of the WRLF on the deepwater ecosystems off the west coast of WA 2004

Investigating reproductive biology issues relevant to managing WRL broodstock 2006

Spatial modelling and assessment of the VSRL 2007

WRLF effects of fishing on the Eco-SRG 2005

Ongoing LBC research

INDUSTRY DEVELOPMENT PROJECTS

Alternative management strategies for the WRLF 1980
WRLF management plan 1995
Impact of new management package on smaller operators in the WRLF 1995
Modelling and risk analysis of the WRLF 1995
Modelling to explore management strategies to optimise the value of the WRLF 1997
Future directions for the RLIAC and the WRLF 1998
WRLF management options and issues 1998
Information on quota management of RLF in SA, TAS and NZ 2000
Modelling to explore management strategies to optimise value of WRLF 2000
Report on ESD relating to management & sustainability of WRL 2000
WRL mail surveys of licensed rec. fishers 1986-1999 2000
Impact of management change to an ITQ in the TRLF 2003
Development of a fisheries management decision rules framework for the WRLF 2004
A scenario analysis of the social impact of the WRLF management options on fleet hosting communities 2004
IFM draft allocation report 2005
Management of WRLF-assessment of southern zone resource sustainability options 2005
Management of WRLF-proposed resource sustainability management package for northern zones (A & B) 2005
Recommendation to the minister for fisheries on resource sustainability management packages for all zones of WRLF 2005
Assessment of WRL strategic management options 2006
Discussion paper: review of management system of the WRLF: industry consultation process 2006
Proposal to implement SLEDS: report developed for RLIAC tour 2006
Review of WRL resource sustainability: report developed for RLIAC tour 2006
Improving economic efficiency through detailed review of input controls in the WRLF 2007

Further development of an employment webpage for WRLF 2007

A pilot project conducted in the WRLF to create a software tool for assessing OH&S compliance on board a commercial fishing vessel 2005