immensely successful. The approach has Cabinet endorsement at the state level and has been accepted by the Commonwealth through DEET and DHRAD.

In terms of implementation a Regional Consultative Group (RCG) has been established in the north and west of South Australia incorporating the entire area of Eyre Peninsula including all of the unincorporated area to the West Australian Border, and including the Northern Spencer Gulf Cities and all of the unincorporated area to the Northern Territory Border. It is likely also that this RCG will incorporate Yorke Peninsula as well. In terms of area the RCG will cover three quarters of the state.

The other RCG which has been recently established is in the South East of South Australia where the RCG includes the 12 Councils in the South East Local Government Association (SELGA) including the South East economic Development Board (SEED) and 11 Councils and 7 Regional Economic Development Organisations in Western Victoria.

Two other RCGs are in the process of establishment and will cover the rest of rural South Australia. In the metropolitan area of Adelaide the process of establishing 2-3 RCGs is ongoing.

Des Mundy
7th December 1994

THE DEVELOPMENT OF A MARICULTURE INDUSTRY IN THE JURIEN BAY AREA

Fiona Weigall
Wheatbelt Development Commission, Western Australia

Western Australia is no stranger to fresh water aquaculture, with Trout, Yabbies, and Marron being grown throughout the state for many years on both a commercial and hobby basis.

However mariculture (aquaculture conducted in a marine environments) is a new industry to the coast of Western Australia. Considering that the state's long unpolluted coastline lends itself favourably to the growth of a wide variety, of fish and shellfish, it is surprising that to date little use has been made of this resource other than for wild capture fishing.

The Shire of Dandaragan, situated in the Central Coast area of the Wheatbelt region (and particularly the areas adjacent to the town of Jurien) is at the heart of a developing aquaculture industry. Indeed Jurien is considered to be one of very few areas in Australia simultaneously developing both a fresh water, inland aquaculture industry (marron) and a marine based industry (marine finfish and mussels).

This paper will concentrate on the Mariculture developments around Jurien, making particular reference to the process used to develop a sustainable industry.

HISTORY OF DEVELOPMENT ALONG THE CENTRAL COAST

Almost ten years ago, some seemingly unrelated events initiated the beginning of the Central Coast's fledging Mariculture industry. A group of Taiwanese investors, believing that the WA coast contained huge quantities of Snapper, began commercial fishing operations off this coast.

It soon became apparent that the fish quantities had been grossly over estimated and the venture was abandoned. However within this time frame the Taiwanese were able to ascertain the comparative advantages of the WA coast for mariculture. The Taiwanese thus began investigating the feasibility of facilitating mariculture developments within the state.
Stemming from this Taiwanese discovery, a Taiwanese backed company submitted a proposal for the development of a mariculture industry within the Hensen Head area of Cervantes. This proposal was rejected as it planned to grow an introduced marine species.

Fremantle TAFE’s research and development facility located at Fleet Street then undertook to catch local wild marine species of broodstock and breed them in a controlled environment. This was the first tangible evidence of the industry’s development.

Concurrently, private entrepreneurs began constructing test lines for the growth of Mussels in waters off Cervantes. This development did not advance beyond the preliminary trials stage, however Mussels were commercially developed at a later stage within the Shire.

In 1990 a joint venture between the Fremantle College of TAFE and Cervantes citizens began, to develop a grow-out industry off the Cervantes coastline. By September 1991 this concept had developed to the stage that two circular sea cages were moored off the shore. These cages remained unstocked until February 1992, when one was stocked with local wild capture species. In January 1993 the first TAFE grown fingerlings were placed in these cages, where they are still growing today.

As would be expected with the development of any new industry, the planning of this industry [mariculture] was initially very ad hoc and reactive.

Meanwhile another private entrepreneur was progressing the development of grow-out facilities south of Jurien. A pilot licence has been obtained, for this project and the unstocked cages have been in the water for a little over a month, waiting for WAFAC (WA Fishing and Aquaculture Centre) to supply Snapper fingerlings.

This project stimulated considerable interest from members of the Jurien community, with a company known as the Jurien Fish Farmers Pty Ltd being formed to collectively progress the development of a grow-out industry in Jurien.

During the Later stages of 1992 a company known as Mid West Hatcheries began investigating the feasibility of establishing a commercial hatchery for the production of Snapper within Cervantes. Upon further consideration, this company recognised that Jurien, with its modern Boat Harbour and associated infrastructure, was a comparatively better location. Thus the proposed location was changed to Jurien and the development progressed.

To date all of the necessary approvals have been sought for the development of this hatchery and an investment prospectus has been released. Once financing is finalised, the company hopes to be operational by late 1994. It was also during 1992 that the feasibility of growing mussels within the region was once again investigated. With the resulting outcome of mussel lines being established in a marine area adjacent to the Jurien townsite.

As would be expected with the development of any new industry, the planning of this industry was initially very ad hoc and reactive. One of the major problems with the development of such a novel industry has been with regard to licensing and regulatory issues - ones that are now being addressed by a variety of departments and agencies.

CURRENT STATUS OF INDUSTRY WITHIN THE SHIRE

Aquaculture has progressed within the Shire of Dandaragan to the stage that the Jurien Fish Farmers Pty Ltd have their first set of cages in the water and are expecting the first delivery of fingerlings for grow out within the next two months. The Mussel farm located in Jurien bay also has lines of product in the water and is optimistic about the potential of this venture.

The Snapper hatchery proposed for Jurien is currently finalising its financing arrangements and will shortly begin undertaking site works and the physical development of the location (on the northern side of the Jurien boat Harbour). Negotiations have also been undertaken with WAFAC to supply the hatchery with its first source of broodstock.

The WA Fishing and Aquaculture Centre is itself preparing to locate sea cages within Jurien Bay. These cages would be used for research and development purposes only. One of the Centre’s roles is to assist industry, as such
there is a requirement for them to conduct ongoing research into the specific conditions and requirements of mariculture within Jurien Bay. Such research needs to be supported by the commercial industry and is of course reliant on the continued development of such an industry.

With the development of any industry comes the demand for a skilled work force and such is the case with aquaculture within the Shire of Dandaragan. Already some short aquaculture related courses have been conducted in Jurien and it is predicted that many more such courses will be conducted in the future.

It is essential for the sustainability of the industry that aquaculture development within the Shire of Dandaragan is correctly planned for and progressed in a systematic fashion. There is a need for the Shire to formulate strict guidelines for the land based aspects of this industry and encourage the agencies responsible for the water based requirements of the industry to do likewise.

**Ad-hoc developments may achieve quicker results in the short term but may also allow for mistakes which will ultimately destroy the industry.**

To this end the Shire has recently obtained funding through a Commonwealth 'Strengthening Local Economic Capacity' grant to produce an Aquaculture Planning Strategy for the Shire. This strategy will address environmental, socio-economic and organisational/management issues relating to both the marine and terrestrial environments. The strategy will be a 'demonstration project', meaning that it will identify the process needing to be undertaken when developing an aquaculture strategy and thus will be applicable to other areas wishing to develop a similar industry.

Planning has been an important factor to the development of the Central Coast's mariculture and aquaculture industries. Though to date there has been little physical evidence of these industries development, considerable effort has gone into the planning for such development. Thus when development does occur it will not be ad-hoc and should occur in an orderly, sustainable fashion.

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**POTENTIAL FOR GROWTH**

With its' pristine protected waters and basic infrastructure (which includes a multi-million dollar boat harbour, fish processing facilities and a multitude of other marine services ), Jurien is in many ways an ideal location for the development of temperate water mariculture. Indeed the fact that so many private investors have recognised this potential and are currently developing within Jurien speaks for itself.

Without the correct blend of natural resources complimented by a compatible infrastructure, any attempt at developing an industry such as this would be futile. The fact that Jurien is just entering its period of rapid growth is also to the advantage of the aquaculture industry, for it ensures that, as the town and region's infrastructures are developed, they can be done so to accommodate the aquaculture industry's requirements. This is more desirable than trying to adapt existing facilities and services.

Though this strict planning may initially slow the development of the industry it will ensure its longevity. Ad-hoc developments may achieve quicker results in the short term but may also allow for mistakes which will ultimately destroy the industry. Providing this prior planning is attended to there is great potential for the development of both fresh water and marine based aquaculture within the region.

Not only does Jurien present potential for the production and growth of fish products, there is equal potential for the development of down stream industries such as processing, sea cage making, feed production and the development of by-products. Jurien's proximity to both Perth and Geraldton via excellent road networks ensures the town's access to intrastate, interstate and international markets. Vertical expansion is currently being investigated by some of those individuals initially involved with the grow out industry.

Likewise, WAFAC in conjunction with the Dept of Agriculture and a private consultant are currently investigating the potential and economic viability of grain based fish feeds as a replacement for fish meal or trash fish. Such a feed source would have positive ramifications for the wider Wheatbelt region and is a good example of the multiplier effects associated with the development of this new industry.

Combined with the region's other natural...
Mediterranean climate, also presents the area with some exciting tourism opportunities. Again the region’s location and road network system will allow for full exploitation of this market. It appears that Jurien is to attract the state’s only commercial finfish hatchery, which is in fact the only hatchery of this kind within Australia. Such a hatchery within the Shire will do much to enhance the status and potential of mariculture within the Shire of Dandaragan. It will also present numerous opportunities for the Shire in terms of employment, downstream industries, tourism opportunities and the attraction of both R & D and E & T services to the region.

The fact that the Shire has both fresh water and marine aquaculture industries developing within its boundaries is to its advantage. The two industries can compliment each other and can combine to access resources such as R & D and E & T services. There is also the potential to form co-operatives for the production of feed and equipment for both industries. The presence of two forms of aquaculture could also help progress the acquisition of an aquatechnology park within the Shire.

ROLE OF THE WHEATBELT DEVELOPMENT COMMISSION

Part of the Wheatbelt Development Commission’s (WDC) charter is to broaden the economic base of the region, as such it involves itself with the facilitation and support of new and emerging industries. The WDC’s association with the aquaculture industry has been particularly strong and consistent, as we recognise the potential of this industry.

The Central Coast’s economy is based primarily around Rock Lobster fishing and associated industries, which while lucrative, are seasonally based. Thus the area is fraught with population fluctuations and seasonal unemployment, which are an impediment to the region’s development. Aquaculture has the potential to provide this community with a stable, static industry with significant employment and downstream opportunities.

The WDC has acted as a facilitator, supporting industry groups to establish themselves and commissioning many of the pre-feasibility studies necessary for the smooth progression of this emerging industry.

One of the most significant tasks of this developmental stage was the commissioning of a ‘Management Plan for the Development of a Marine Finfish Sea Cage Culture Industry in the Jurien Region’. This document played a significant role in the obtaining of licences through the Inter Departmental Committee for Aquaculture (IDCA). This plan comprehensively addressed:

- Cage designs and sizes of cage designs to be used;
- Restrictions on licences to be issued during the developmental phase of the industry;
- Staged development of the cage culture industry;
- Stocking of cages;
- Feeding of the marine finfish in the cages;
- Disease prevention and control;
- Environmental monitoring; and
- Production monitoring.

One of the major issues identified in both the above mentioned documents was the need for
environmental monitoring. The Jurien Bay area is a high energy coastline of a pristine nature, used by recreational and rock lobster fishermen. It was therefore important to the sustainability of the new mariculture industry that the sea cages were correctly placed, stocked and managed to have minimal effect on the environment.

...the WDC is now assisting with the facilitation and sourcing of funds to develop grain based fish feeds...

The WDC has thus been working in conjunction with the University of WA to develop a document making 'Recommendations for Environmental Monitoring of the Jurien Bay Marine Finfish Sea Cage Culture Industry, Western Australia'. This document is still in draft format pending acceptance by the Jurien Fish Farmers Pty Ltd. The WDC has also applied for a Collaborative Research Grant with University of WA and the Jurien Fish Farmers Pty Ltd to develop a decision making system for site selection and environmental management of an emergent sea cage finfish industry at Jurien Bay, Western Australia.

Finally, the WDC is now assisting with the facilitation and sourcing of funds to develop grain based fish feeds as an alternative to fish meal and trash fish. The research for this project is being undertaken jointly by the Department of Agriculture, WAFAC and a private consultant. A project which has the potential to create new markets for locally grown grains, as well as enhancing the viability of the new mariculture industry.

The WDC’s only other involvement with the continued development of a mariculture industry at this point in time, is as a part of the core working group advising the consultant preparing the Aquacultural Planning Strategy for the Shire of Dandaragan.

The development of a mariculture industry within Western Australia, has given regional development bodies such as the Wheatbelt Development Commission the somewhat unique opportunity of involving themselves in the planning of regional policies and practices for a emerging primary industry.

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THE INTERACTION OF GOVERNMENT FUNDERS AND MANAGEMENT IN REGIONAL DEVELOPMENT ORGANISATIONS

Helen Monks
Gosford City Council, NSW

In examining the topic of interaction between government funders and management in Australian regional development organisations, my intention at this stage is to raise some relevant yet new issues. In a year some tentative recommendations may have been formulated to address those issues.

The focus in this paper is on economic development in non-metropolitan Australia. "Government funders" refers state and federal government, rather than local government, who are considered as local stakeholders. This paper focuses on the structures involved in regional development, and some interactions between them. It examines in order regional development organisations, or RDOs, and their management, then government and its role in regional economic development and RDO structures.

The picture presented has been created from a variety of sources - from work as a regional development practitioner in northern N.S.W. for most of the last decade, from sharing through conferences and exchanges of papers with other practitioners, and now from a formal research program which started with a review of the literature of development programs overseas, of organisation theory, of public sector, business and non-profit sector management, of the activities of RDOs in Australia and is continuing through documentation of case studies of RDOs in Eastern Australia. To allow comparisons, the RDOs being studied are a mix of central government funded organisations (one is a NSW Regional Development Board) and of community-funded organisations. All relate stories that confirm the management and development literature here and overseas.

The wealth of literature on overseas and national development programs highlights the interactions between funders of development and recipients - recipient yet intermediary organisations as well as beneficiaries of the programs themselves. Particularly with the passage of time, relations between funder and...