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**MINISTER FOR PRIMARY INDUSTRY, FISHERIES AND RESOURCES**

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Ms Maria Vamvakinou MP  
Chair Standing Committee on Industry,  
Science and Innovation  
PO Box 6021  
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CANBERRA ACT 2600

Dear Ms Vamvakinou

I refer to your letter dated 2 December 2009, to the Chief Minister of the Northern Territory seeking submissions from the Northern Territory Government to your Inquiry into Australia's International Research Collaborations.

I have pleasure in providing you with a submission on behalf of my Department of Resources.

I wish your committee well in its investigations into this important aspect of the Australian research landscape.

Yours sincerely

KON VATSKALIS  
- 2 FEB 2010



**NORTHERN TERRITORY GOVERNMENT**

**DEPARTMENT OF RESOURCES**

**FISHERIES GROUP**

**SUBMISSION TO**

**THE HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON  
INDUSTRY, SCIENCE AND INNOVATION**

**INQUIRY INTO AUSTRALIA'S INTERNATIONAL  
RESEARCH COLLABORATIONS**

## **BACKGROUND**

On 2 December 2009, the House of Representatives Standing Committee on Industry, Science and Innovation (the Committee) wrote to the Chief Minister seeking a submission from the Northern Territory to its inquiry into Australia's International Research Collaborations.

Under the Terms of Reference, the inquiry is to consider:

1. The nature and extent of existing international research collaborations.
2. The benefits to Australia from engaging in international research.
3. The keys drivers of international research collaboration at the government, institutional and researcher levels.
4. The impediments faced by Australian researchers when initiating and participating in international research collaborations and practical measures for addressing these.
5. Principles and strategies for supporting international research engagement.

## **EXISTING INTERNATIONAL RESEARCH COLLABORATION**

The Aquaculture and Fisheries Research Branches of the Fisheries group, Department of Resources, Northern Territory Government have had significant involvement in international research collaboration over the past three decades:

These projects include:

Wild stock fisheries:

- Joint Venture (JV) observer programs in Australia/Taiwan and Australia/Thailand JV fisheries in northern Australia.
- Australian Centre for International Agricultural Research (ACIAR) and Fisheries Research and Development Corporation (FRDC) funded international workshops on fisheries and aquaculture of barramundi and barramundi-like fishes.
- Various assessment programs and collaborations including the University of Miami, the University of British Columbia and Washington University.
- Research into fishery by-catch reduction with the United States National Marine Fisheries Service.
- ACIAR-funded studies into the biology, stock structure and stock assessment of stocks of red snappers potentially shared by Australia and Indonesia (with CSIRO, Macquarie University., Indonesian fisheries management and marine research agencies). Additional stock assessment of red snappers, additionally including University of Wollongong.
- Stock assessment of sharks in artisanal fisheries of Indonesia (ACIAR-funded work with CSIRO, Macquarie University, Indonesian fisheries management and marine research agencies).
- ACIAR-and Crawford-funded characterisation of fisheries resources and capabilities in Timor Leste in association with Charles Darwin University.
- Development of genetic tagging programs in Australia (with contributions from University British Columbia) and in British Columbia (with Simon Fraser University).
- Contributions to assessment of Spanish mackerel (kingfish) in the Sultanate of Oman.

#### Current wildstock projects:

- Development of future fisheries stock assessment program with the University of British Columbia.
- Development of a genetic mark-recapture program for albacore tuna with the South Pacific Commission.
- Memorandum of Agreement between the Fisheries Centre, University of British Columbia and the NT Fisheries Group for the development of fisheries research, assessment and training (currently lapsed but in the process of re-negotiation).

#### Aquaculture:

##### Formal collaborations:

- Mud crab hatchery and nursery research funded by ACIAR in association the University of the Philippines in Visayas and the South-East Asian Fisheries Development Centre (SEAFDEC) aquaculture department.
- Re-circulating Aquaculture System development, University of North Carolina and the French Research Institute for the Exploitation of the Sea (IFREMER).
- Memorandum of Understanding between NT Fisheries and Gondol Research Institute for Mariculture, Bali on collaborative aquaculture research.

##### Informal collaborations:

- Golden snapper hatchery production University of Texas at Austin.
- Snapper culture, Centro de Investigación en Alimentación y Desarrollo (CIAD), Mazatlan, Mexico.
- Fish disease research in association with IFREMER, France and a private company in Greece.

#### Current Projects

- Southern Bluefin Tuna and Yellowtail Kingfish culture, Seafood Cooperative Research Centre with collaborators in Japan and Panama. In partnership with the Australian private sector.
- Sea Cucumber culture, ACIAR with collaborators in Vietnam and the Philippines. In partnership with the Australian private sector.

## **BENEFITS FROM ENGAGING IN INTERNATIONAL RESEARCH**

Overall, involvement in international collaborative research by the Fisheries group has been extremely beneficial. Benefits from international research are greatest for work of a global nature, where similar goals are pursued by all collaborating partners. In the case of aquaculture, this is generally the case as many countries, both of rich and poor economies, are pursuing economic development through aquaculture and fishery programs. This is generally driven through a strong policy position within the country's government agency. Thus aquaculture and fisheries researchers work towards very similar outcomes and, while the technologies may differ depending on each country's specific capacities, there is a vast body of research that is common to all.

Fisheries for the same species tend to exhibit different levels of harvest in the contexts of developed and less-developed countries. Typically this is coupled with different levels of information gathering capacity. This has been an important stimulus for the development of approaches for management of data-poor fisheries, and has provided experience at different levels of harvest in fisheries for shared species.

Interestingly, often the greater skill and expertise is held within the poorer countries where there is a focus on aquaculture development to alleviate regional communities. In such cases there is an opportunity for Australia to improve living standards of poorer countries through collaborative research, and access funds through aid organisations.

International collaborative research enables excellent science, sharing of data and improved productivity of research, and gaining access to overseas research results and data instantaneously. In a field such as aquaculture, often being at the cutting edge of innovative research is extremely important. International collaboration provides a cost-effective way of gaining access to the latest research and technical methods to assist local industry development.

Access to research funds is often more difficult now than in the past. Leveraging scarce funds through collaboration is a key strategy to provide mutually beneficial outcomes.

In the case of collaboration with poorer countries, collaborative research with Australian researchers offers valuable opportunities for those countries to improve their environmental management capacity or reduce hazards by accessing research that allows knowledge transfer from countries with more stringent environmental and health standards.

There is also the benefit of the development of a strong network of contacts where people with a wide range of experience and expertise can be called upon to assist with solving issues outside of the scope of the original research project. i.e. 'developing the capacity to phone a friend...!'

Benefit may also be derived by staff involved in the research and the project may provide an effective means to keep staff motivated and to help the career/personal development of staff. Staff exchanges, study tours and attendance at international conferences are all effective ways of increasing the skill base in Australia and motivating staff.

It is not only formal research collaborations that benefit Australia. Informal associations originating 'over coffee at conferences' or through email enquiries can often lead to longer term benefits for Australian research. On a number of notable occasions in the Northern Territory a 'casual enquiry' has led to significant collaborations. An example of this would be the relationship developed between the Territory's Darwin Aquaculture Centre (DAC) and CIAD in Mazatlán, Mexico. What started as a simple 'question and answer' email from the Mexicans to DAC evolved into a staff exchange for a PhD student and attendance by DAC staff at an international nutrition conference in Mexico.

## **KEY DRIVERS FOR INTERNATIONAL RESEARCH COLLABORATION**

The key drivers include:

- The global nature of subject – both Fisheries and Aquaculture research is a global industry with many of the issues, species and developments being shared around the world.
- Access to expertise in the research field. Australia has a talented, but limited pool of fisheries and aquaculture researchers. Being able to tap into the wider research resource of the rest of the world is essential for Australian industry development and to assist the sustainability of Australian natural resources.
- Rapid innovation and need to access new developments in a timely manner.
- Government policy on aid to developing countries.

- Pursuit of excellence in research.
- Engagement of research staff and opportunity for professional development
- The need to gain maximum benefit from available budget and resources. International collaboration provides the opportunity to gain leverage on existing budgets, and allows for more to be achieved than would otherwise be possible if the research was done totally in-house.
- A strong commitment to industry support and ensuring industry development is ecologically sustainable.
- The need for an immediate response as problems arise within industry. Quite often the problems may be 'new' to Australia but have already been experienced, and solved, overseas.

## **IMPEDIMENTS TO COLLABORATION**

- Difficulty in determining where research capacity is located. Quite often overseas research capacity or the opportunity for collaboration will be stumbled upon by accident, through a chance meeting or an email in response to an article.
- Lack of formal and effective communication systems to facilitate research partnerships and scope opportunities.
- Lack of dedicated funds to facilitate international collaboration.
- Feasibility of coordinating research projects between partners that are physically separated.
- As a state agency, the Northern Territory Government cannot usually be a leader in, for example, ACIAR-funded projects where the topic is a fish stock straddling international jurisdictions. In this case, national agencies have been considered the appropriate leaders. For example, red snappers are stocks straddling Australian Indonesian and Timor Leste fishing zones and the CSIRO rather than the Northern Territory may be considered the appropriate lead agency.
- Resource limitations. Many Australian agencies are busy being focused on core activities and the prospect of taking on the demands of a collaborative project, especially the often onerous reporting requirements, may be considered too difficult.
- Limited travel budgets and therefore limited opportunity to participate in international workshops from which international projects are often developed.

## **PRINCIPLES AND STRATEGIES FOR SUPPORTING INTERNATIONAL RESEARCH ENGAGEMENT**

The following actions may facilitate improved international research collaboration:

1. Identification of key research areas that will benefit most from opportunities for international engagement (global nature: agriculture, fisheries management and compliance, aquaculture, climate change, energy alternatives, health, etc)
2. National systems and processes to facilitate effective international research engagement.
  - a. Web-based communication networks within disciplines.
  - b. Dedicated funds to facilitate international research projects.
  - c. Technology transfer opportunities and incentives.
  - d. Linkage with industry partners to leverage benefit and adoption of innovation and research outputs (particularly for agriculture and aquaculture).
3. Government recognition of the benefits to Australia of international cooperative research and a commitment to identifying opportunities and facilitating cooperation.

4. Government recognition of the role collaborative research can make in meeting Australia's commitment to improving the standard of living in developing countries.
5. Government support and recognition of the importance of peer-review of research outputs at international workshops, conferences and journals – providing for the exhibition of Australian quality research as well as opportunities for information gathering and network development.

The Fisheries group of the Northern Territory Government is a strong supporter of International Research collaboration as a tool to assist industry development and to contribute the ecological sustainability of the Territory's natural resources.

I thank you for the opportunity to contribute to the committee's inquiry.

Signed for and on behalf of the  
Northern Territory Government

By the Minister for Primary Industry, Fisheries and Resources



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THE HON KON VATSKALIS MLA

Date: - 2 FEB 2010