



Integrated Aquaculture
Networking Workshop
Northampton, 16-18 November 2005

REPORT TO THE INDIGENOUS LAND CORPORATION

Indigenous participation • industry involvement • learning outcomes achieved



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smart mine lakes

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EXECUTIVE SUMMARY

Overview

The Northampton workshop was convened by the Centre for Sustainable Mine Lakes (CSML) and the Central West College of TAFE in association with the Ngalang Boodja Council, Collie. The workshop was conducted at Gregory Springs Farm, Northampton from 16 to 18 November 2005 through funding provided by the Indigenous Land Corporation, the Mid West Development Commission, Central West College of TAFE, Desert Knowledge CRC and the Centre for Sustainable Mine Lakes.

The primary goals of the workshop were to:

- promote an opportunity to start developing a network of aboriginal people, technical experts and farmers involved in integrated aquaculture to identify effective approaches to build capacity of aboriginal people to develop sustainable enterprises on integrated aquaculture;
- enhance the technical knowledge and understanding of integrated aquaculture by aboriginal participants and create an opportunity for the Collie aboriginal participants to network with other aboriginal people involved in or interested in aquaculture ventures;
- introduce inland integrated aquaculture to aboriginal people and farmers to aid in the development and implementation of local opportunities for income diversification;
- start building a database with aboriginal people and farmers inputs regarding their needs and challenges to develop potential aquaculture business;

The workshop comprised a two day course in integrated aquaculture, delivered by CSML, Muresk Institute and TAFE staff and Mr Frank Mauger, Gregory Springs Farm, for Aboriginal community members from South West and Mid West Aboriginal communities. The course was followed by a one day open seminar attended by the course participants and tutors, along with farmers from the Mid West region, other Aboriginal people and government agency representatives.

Aboriginal participation and industry involvement

Members from four Aboriginal communities attended the two day workshop - Ngalang Boodja Aboriginal Community, Collie (5 people), Barrel Well Aboriginal Community, Kalbarri (5 people), Moonie Mia Aboriginal Community, Northampton (2 people) and the Yarrlgu Bunna Aboriginal Corporation, Yalgoo (4 people). Attendees from the three major groups all included community elders and young people interested in aquaculture. A school teacher from the Pia Wadjarri Remote Community School, located about 200km from Yalgoo, also attended the course as did 6 members of the CSML Mining for Country team, Mr Frank Mauger from Gregory Springs and 4 staff members from the Geraldton College of TAFE.

Two representatives from the Tjupan Ngalia Aboriginal Tribal Council had also planned to attend the course but were unable to attend due to family commitments.

In addition to the course attendees, a further 9 farmers, 3 more Aboriginal people and representatives from the Mid West Development Commission, the Mid West Business Enterprise Centre and the Geraldton Branch of the WA Department of Environment, attended the one day seminar, giving a total workshop attendance of 44 people.

Outcomes

The workshop was an undoubted success. During the first two days of aquaculture training course, the Aboriginal attendees demonstrated enthusiasm and a keen interest to learn more about integrated aquaculture. At the seminar, conducted on the final day, local farmers demonstrated interest in improving their knowledge regarding aquaculture, looking for new opportunities to diversify their income and assess likely returns from investing in this type of business. The CSML and TAFE staff who delivered the course also benefited from their participation.

Some of the more noticeable general outcomes for the **Aboriginal participants** from the workshop were:

- Interest and enthusiasm to learn more about integrated aquaculture and move towards developing an aquaculture venture;
- Commitment to a cooperative approach to enterprise development, learning and sharing of knowledge and support of each other;
- An understanding of the aquaculture industry and an insight into what local farmers are thinking about in regards to the industry;

Some of the noticeable outcomes for **CSML, Muresk and TAFE staff** were;

- An understanding of the aspirations of Aboriginal people in regards to integrated aquaculture, enterprise development or community development;
- Greater awareness of the complexities and barriers associated with Aboriginal training, employment creation and enterprise development;
- A commitment to be involved in another integrated aquaculture workshop with Aboriginal people and future capacity building activities.

Learning outcomes

The goal of the two day program was to provide an overview of the various facets of integrated aquaculture, with emphasis on practical demonstrations. The wide range of topics covered precluded any opportunities for students to develop competencies in any particular procedures or techniques. However, there was significant learning with respect to an increase in knowledge and understanding of the principles and practices of integrated aquaculture.

During the two day course the Aboriginal participants gained insight into:

- The basic principles of cultivating fish with emphasis on cultivation systems, feeding approaches and general animal husbandry techniques;

- The important water quality parameters that affect fish health and how to control these parameters
- Important considerations in managing a fish farm operation
- How to hatch live feeds
- Approaches currently being used in marron aquaculture
- Approaches used in the propagation and cultivation of native plants

Insight was also gained into how to link an aquaculture venture with plant cultivation

Evaluation

Over the first two days of the workshop, feedback was sought from all of the Aboriginal participants in regards to the course. This was not a formal evaluation, but an exercise to seek Aboriginal views and opinions. Generally they were asked:

- What they thought of the course
- Did they find the information useful?
- Could they use the information in any way?
- Could things have been done better?

The common themes from the answers to these questions were as follows:

- The participants felt that the course and the information presented were interesting, stimulating and informative. Generally they understood the information, but would have preferred more hands-on activities or hands-on practical information
- An important issue was how to move from doing a course to establishing an enterprise because community groups lacked the skills and abilities to obtain funds and write submissions. However it was understood that a cooperative approach between all the Aboriginal groups will give them a stake in the industry and provide the forum for sharing information and knowledge.
- There was also concern that because of the barriers to economic development for Aboriginal communities, they would be disadvantaged and other sectors of society would take the initiative, taking advantage of aquaculture technology and information. Some participants expressed the view that Aboriginal people want a fair go in enterprise development. There was also a view that the talking and well wishing had to be backed up with action.

Issues and recommendations

The following topics of relevance to future networking and enterprise development are addressed in the report:

- Aboriginal networking and participatory decision making processes
- Economic or commercial advantage of an Aboriginal network
- Networking across the divide

- Hands-on learning
- Formalising the course - objectives and competencies
- Linking the scientific with the social, cultural, economic and environmental
- Protecting and using Aboriginal knowledge
- CSML Curtin University, Central West TAFE and Frank Mauger Collaboration

Recommendations to address the issues raised in relation to these various topics are as follows:

Recommendation 1: *The project should a participatory and consensus building approach to discussion and decision making.*

Recommendation 2: *An Aboriginal Networking Cooperative should be formed to advance enterprise development by Aboriginal people*

Recommendation 3: *Further efforts should be made to establish a network of Aboriginal and non-Aboriginal people who have a common interest in integrated aquaculture*

Recommendation 4: *For future short courses there needs to be a greater focus on developing a style and method that incorporates hands-on activities and discussion.*

Recommendation 5: *A review of current courses that incorporate aquaculture, plant cultivation, enterprise development and governance, should be conducted with the aim of creating a short course in integrated aquaculture specifically designed for Aboriginal people.*

Recommendation 6: *Integrated aquaculture training must be contextualized within the social, cultural, economic and environmental aspects of Aboriginal life.*

Recommendation 7: *Initiatives aimed at creating networks to share knowledge between Aboriginal people and the wider society need to respect the right of Aboriginal people to own, control, manage, protect and use their traditional knowledge. The right of Aboriginal people to receive fair and equitable compensation and/or benefits for the use of their knowledge must also be respected.*

Recommendation 8: *CSML and Muresk staff from Curtin University, Central West College of TAFE staff and Frank Mauger should continue to work together to assist facilitate the development of integrated aquaculture ventures with Aboriginal people. Facilitation emphasises advocacy, networking, training, technical support and monitoring.*

Future actions

There is commitment from all parties to take this project forward. Three key future activities were identified:

1. **Strategic planning** – There needs to be a planning process undertaken in each participating Aboriginal community to identify their aspirations, define their

goals and objectives, identify resource needs and identify where funding and resources can be obtained.

2. **Integrated aquaculture network** – A network of Aboriginal communities interested in developing integrated aquaculture ventures should be established. Another training and development workshop should be held. The purpose of this workshop and future workshops would be to bring the Aboriginal groups together to share ideas and information, acquire knowledge and skills, identify enterprise or socio-economic project opportunities and to assist the Aboriginal groups develop these projects.
3. **Enterprise development projects** – local Aboriginal community enterprise or socio-economic projects should be identified and funds and other resources sought to assist those communities develop and establish projects.

WORKSHOP REPORT

1. Background

The Curtin University of Technology CSML team has been working on a capacity building project in integrated aquaculture for Aboriginal people from Collie, Western Australia since 2003, the Aboriginal Integrated Aquaculture Project. The vision for the project is a successful Aboriginal owned and operated integrated aquaculture venture in Collie and/or Collie Aboriginal people in full employment in local aquaculture ventures by 2010. The initiative forms part of a wider CSML project, Mining for Country (M4C) that has three core objectives:

1. Conduct case studies of mine site restoration projects that include cultural as well as ecological values in rehabilitation practices
2. Identify evidence based success factors for sustainable Aboriginal enterprise development
3. Identify successful approaches to education and training for employment and enterprise in the minerals industry

The Aboriginal Integrated Aquaculture Project aims to conduct a long term capacity building and enterprise program in integrated aquaculture that will lead to the establishment of Aboriginal aquaculture and associated horticulture ventures, in which the water from the fish farming operation is used to irrigate horticulture plots (integrated aquaculture). Discussions on the Collie integrated aquaculture venture commenced in 2003 and are on-going. The Collie Shire has supported this project through arranging a block of land to be vested in the local Aboriginal Corporation - Ngalang Boodja Council Aboriginal Corporation. A small scale aquaculture enterprise will be established on this area. The Federal Department of Agriculture, Fisheries and Forestry have agreed to provide \$16,200 towards the purchase of aquaculture equipment to use in this enterprise.

In mid 2005 a meeting was held with representatives from the Central West College of TAFE and a Northampton based fish farming business, Gregory Springs, to discuss the possibility of extending the integrated aquaculture project to the Mid West. The Central West College of TAFE and Gregory Springs have been involved in conducting aquaculture training programs with members of the Yalgoo Aboriginal community. Interest was expressed in the proposal for a Mid West component of the project and it was suggested that a training workshop be held at the Gregory Springs to advance this goal.

Meetings were also held with members of the Tjupan Ngalia Aboriginal Tribal Council, an Aboriginal corporation from Leonora that plans to develop a fish out venture at Malcolm Dam, a water body near the Leonora town site. Members of that community expressed interest in attending the proposed workshop.

Following these initial meetings a steering committee was formed comprising representatives from CSML, Central West TAFE, Gregory Springs and the Ngalang Boodja Council to plan and convene the workshop. Funding was sought from the Indigenous Land Corporation, the Mid West Development Commission, DAFF, Central West College of TAFE and Curtin University and other agencies. Sufficient funds were promised to launch the initiative and the workshop, comprising a two day workshop with Aboriginal community representatives, and a one day open seminar to which farmers from neighbouring districts were invited, was conducted. This report provides an overview of the workshop and a report on outcomes and recommendations.

2. Overview

The workshop comprised a two day course in integrated aquaculture for Aboriginal community members from South West and Mid West Aboriginal communities. And was delivered by CSML, Muresk Institute and TAFE staff and Mr Frank Mauger, Gregory Springs Farm. The course was followed by a one day open seminar attended by the course participants and tutors, along with farmers from the Mid West region, other Aboriginal people and government agency representatives.

The primary goals of the workshop were to:

- promote an opportunity to establish a network of aboriginal people, technical experts and farmers involved in integrated aquaculture to identify effective approaches to build capacity of Aboriginal people to develop sustainable enterprises on integrated aquaculture;
- enhance the technical knowledge and understanding of integrated aquaculture by aboriginal participants and create an opportunity for the Collie Aboriginal participants to network with other Aboriginal people involved in or interested in aquaculture ventures;
- introduce inland integrated aquaculture to Aboriginal people and farmers to aid in the development and implementation of local opportunities for income diversification;
- start building a database with Aboriginal people and farmers inputs regarding their needs and challenges to develop potential aquaculture business;

The workshop goals were achieved by:

- Organising and conducting the workshop in Northampton on 16, 17 and 18 November 2005.
- Bringing Aboriginal people from Collie, Kalbarri, Northampton and Yalgoo to Gregory Springs Farm to participate in the workshop as well as to talk to one another, and to the tutors and experts who also attended the workshop, about setting up and managing an integrated aquaculture enterprise.

- Delivering a training course and conducting field exercises on integrated aquaculture – The course, field exercises and seminar were conducted on Frank Mauger’s property, Gregory Springs. Mr Mauger has been involved in marron and fresh water fish farming for over 20 years. The training course was provided by CSML and TAFE staff and other mentors who have experience in inland saline aquaculture, marron aquaculture, fresh water polyculture techniques, propagation and cultivation of native plants, integrated aquaculture systems, governance and business management.
- Conducting a seminar on fish and plant cultivation opportunities with emphasis on networking and business planning - The seminar brought together local farmers and others from around Northampton and the Aboriginal participants to share technical and business knowledge and discuss issues relating to establishing and managing an integrated aquaculture business.

3. Program

The two day aquaculture training course was delivered by Curtin University CSML and Muresk Institute staff, Central West College of TAFE staff and other mentors on Wednesday and Thursday, 16th and 17th November. The course covered the following topics:

- General aquaculture
- Water quality
- Live Feeds
- Management styles
- Enterprise planning and development
- Systems designs
- Marron aquaculture

(See Appendix 1 for the detailed course program).

The one day seminar was conducted on Friday, 18th November. Topics included:

- Introduction to aquaculture technology including inland saline aquaculture
- Polyculture techniques for freshwater crayfish and fish
- Suitability of water for aquaculture
- Mid-west indigenous aquaculture project report
- Propagation and cultivation of native plants
- Farmer’s viewpoint: Main issues for consideration
- Starting a business

(See Appendix 2 for the detailed seminar program).

4. Attendees

Members from four Aboriginal communities attended the two day workshop - Ngalang Boodja Aboriginal Community, Collie (5 people), Barrel Well Aboriginal Community, Kalbarri (5 people), Moonie Mia Aboriginal Community, Northampton (2 people) and the Yarrlgu Bunna Aboriginal Corporation, Yalgoo (4 people). Attendees from the three major groups all included community elders and young people interested in aquaculture. A school teacher from the Pia Wadjarri Remote Community School, located about 200km from Yalgoo, also attended the course as did 6 members of the CSML Mining for Country project team, Mr Frank Mauger from Gregory Springs and 4 staff members from the Central West College of TAFE. Two representatives from the Tjupan Ngalia Aboriginal Tribal Council had also planned to attend the course but were unable to attend due to family commitments.



Workshop participants at Gregory Springs Fish Farm

The seminar was opened by Hon Murray Criddle, MLC and was attended by 9 local farmers, the course attendees, three more Aboriginal people from Barrel Well Aboriginal Community and representatives from the Mid West Development Commission, the Mid West Business Enterprise Centre and the Geraldton Branch of the WA Department of Environment, giving a total attendance of 44 people.

5. Outcomes

5.1 General outcomes for all participants

Some of the more noticeable outcomes for the **Aboriginal participants** from the workshop were:

- Interest and enthusiasm to learn more about integrated aquaculture;
- Interest in moving towards developing an aquaculture enterprise or community development project based around aquaculture;

- Commitment to a cooperative approach to enterprise development, learning and sharing of knowledge and support of each other;
- A sense of shared interest in aquaculture and a joint approach to enterprise development and sharing of information, advice and knowledge;
- An understanding of the aquaculture industry and an insight into what local farmers are thinking about in regards to the industry;
- Friendships, networks and social bonds formed during the workshop.

Some of the noticeable outcomes for **CSML and TAFE staff** were;

- Friendships, networks and social bonds with Aboriginal people from Yalgoo, Northampton and Collie;
- An understanding of the aspirations of Aboriginal people in regards to integrated aquaculture, enterprise development or community development;
- Greater awareness of the complexities and barriers associated with Aboriginal training, employment creation and enterprise development;
- A better understanding of the future direction of the project and the support required to take the project further;
- A sense or feeling of having successfully achieved personal and project objectives;
- A commitment to be involved in another integrated aquaculture workshop with Aboriginal people and future capacity building activities.
- Awareness of the complexities associated with networking across the divide (local farmers and aboriginal participants).

5.2 Learning outcomes achieved

While the short course delivered at Gregory Springs Farm was not an accredited course it was based on University or TAFE accredited units. The goal of the two day program was to provide an overview of the various facets of integrated aquaculture, with emphasis on practical demonstrations. The wide range of topics covered precluded any opportunities for students to develop competencies in any particular procedures or techniques. However there was significant learning with respect to an increase in knowledge and understanding of the principles and practices of integrated aquaculture.

During the two day course the Aboriginal participants gained insight into:

- The basic principles of cultivating fish with emphasis on cultivation systems, feeding approaches and general animal husbandry techniques;
- The important water quality parameters that affect fish health and how to control these parameters
- Important considerations in managing a fish farm operation
- How to hatch live feeds
- Approaches currently being used in marron aquaculture
- Approaches used in the propagation and cultivation of native plants

Insight was also gained into how to link an aquaculture venture with plant cultivation.

6. Aboriginal Participant Comments

Over the first two days of the workshop, feedback was sought from all of the Aboriginal participants in regards to the course. This was not a formal evaluation, but an exercise to seek Aboriginal views and opinions. Generally they were asked:

- What they thought of the course
- Did they find the information useful?
- Could they use the information in any way?
- Could things have been done better?

The answers provided to these questions are given in Appendix 3. The common themes that emerged from these answers were as follows:

- The participants felt that the course and the information presented were interesting, stimulating and informative. Generally they understood the information, and appreciated the efforts of the course presenters to conduct hands-on, practical activities. For some participants the information was useful because it reinforced what they had already learned. For others with no previous training in aquaculture the course introduced them to the basic principles of aquaculture. Both groups found the course of value through the information received on how to approach setting up an integrated aquaculture business;
- An important issue was how to move from doing a course to establishing an enterprise because community groups lacked the skills and abilities to obtain funds and write submissions. However it was understood that a cooperative approach between all the Aboriginal groups will give them a stake in the industry and provide the forum for sharing information and knowledge.
- There was also concern that because of the barriers to economic development for Aboriginal communities, they would be disadvantaged and other sectors of society would take the initiative, taking advantage of aquaculture technology and information. Some participants expressed the view that Aboriginal people want a fair go in enterprise development. There was also a view that the talking and well wishing had to be backed up with action.

7. Issues and Recommendations

Issues of importance to future networking and enterprise development initiatives, and recommendations to address those issues were as follows:

7.1 Aboriginal networking and participatory decision making processes

On the second day of the training course, a meeting was held with the senior Aboriginal participants to discuss the future direction of the project. A separate

meeting was also held with the younger Aboriginal participants to seek their views and ideas. It was encouraging to see a combination of senior and younger participants from each community attending the workshop and participating in the planning discussions. It was also encouraging to see young Aboriginal women attending the course.

The meeting with the senior Aboriginal group agreed to form a joint cooperative network to assist their communities to establish aquaculture projects and work collaboratively with CSML and Central West TAFE. They agreed there is a need to obtain further funds and that another workshop should be held within three months. They also agreed to bring more people, particularly younger people into the project and to have a newsletter to keep people informed about the project. The younger group understood that aquaculture not only involves growing fish, but also includes enterprise development and management. They expressed the need to have more practical hands-on activities for training. The younger group also expressed very positive views about the workshop, particularly in relation to the positive effect it had on them. They suggested there should be more workshops and more Aboriginal people should be invited to join the project.

For the Yalgoo participants, aquaculture training has had a positive effect on their community. They have already completed a certificate in rural skills (aquaculture).

The importance of inclusive decision making processes was emphasized. Clearly these meetings set the scene for a participatory and inclusive process in terms of expressing views and opinions and making decisions. The future success of the project will depend on employing a participatory and consensus building approach to discussion and decision making.

Recommendation 1: *The project should involve a participatory and consensus building approach to discussion and decision making.*



At the Sea Horse Hatchery

7.2 Economic or commercial advantage of an Aboriginal network

From an Aboriginal perspective the basic premise is that there is no real equality of opportunity for Aboriginal people in enterprise or economic development because there are a number of barriers which Aboriginal people or communities face. For example Aboriginal people lack access to capital, don't have credit ratings, or do not have a secure land base. The issue that arises is whether training workshops and formal courses provide an economic or commercial advantage to Aboriginal people.

Training workshops or formal aquaculture courses may not be enough to place Aboriginal people on an equal footing with mainstream society to develop aquaculture enterprises, gain a stake in the aquaculture industry or assist overcome the barriers to economic development. What is required is a developmental process that assists Aboriginal people define and implement their own economic development agenda. In this process integrated aquaculture training is an important tool and/or catalyst for creating opportunities or initiating socio-economic development projects. This approach goes beyond increasing the existing capabilities of people through training. It focuses on providing technical and development assistance to Aboriginal communities as well as building their organisational and governance capacity. It also involves bringing government, the private sector and other civil society organisations into the process to provide resources and support to projects.

The consensus view of workshop attendees was that an Aboriginal Networking Cooperative should be formed to advance enterprise development by Aboriginal people. This would be seen as a positive initiative because it is a structure through which a capacity development approach can be facilitated.

Recommendation 2: An Aboriginal Networking Cooperative should be formed to advance enterprise development by Aboriginal people

7.3 Networking across the divide

The intention of the one day seminar was to invite farmers to learn about integrated aquaculture and for the Aboriginal participants to meet with and network with farmers. Although there were some discussions between farmers and some Aboriginal participants, networking across the divide largely did not happen. Networks and partnerships happen when people identify common understandings, interests or needs and perceive that a collaborative working relationship will be benefit their interests. There was only limited opportunity at the workshop for Aboriginal and non-Aboriginal people to identify common understandings and goals, mainly because of the small number of non-Aboriginal attendees.

Most farmers who attended the seminar were presumably looking for new opportunities to diversify and to assess whether they get a return on investing in aquaculture. For Aboriginal participants, they are interested in aquaculture and would like to get into the industry but face many barriers. It is important to bring farmers or other rural stakeholders into the project and the collaborative networking process, although the issue is how and when. Should it be done now or is it better to wait until

the Aboriginal groups clarify where they want to go in the future with aquaculture and identify their needs as well as build their knowledge and confidence?

A key issues is that networks, partnerships or collaborative arrangements with farmers or other rural stakeholders must deliver an advantage or benefit to Aboriginal people.

Recommendation 3: *Further efforts should be made to establish a network of Aboriginal and non-Aboriginal people who have a common interest in integrated aquaculture*

7.4 Hands-on learning

A number of Aboriginal participants identified hands-on activities as their preferred method of learning. Participatory or hands-on learning links learning with participation and action, enabling Aboriginal perspectives to become part of learning and understanding. Efforts were made to incorporate participatory and action learning into the course. In putting the course together, there was discussion on ensuring that the delivery of facts and information suited the needs of the Aboriginal participants. Despite these preliminary efforts to ensure that the course was very practically oriented the first day's program still comprised a majority of didactic lectures, although the lecturers were clearly trying to include demonstrations and other practical activities in the course program. An evaluation session was conducted at the end of the first day at the instigation of the lecturing staff. It was encouraging to see the academic staff looking for ways to make learning an enjoyable and productive experience. The discussions resulted in a change in the mode of delivery on the second day to a more participatory discussion style. The course attendees commented that this was a preferable approach.

The Yalgoo participants commented on the practical approach being adopted by the TAFE lecturer in the delivery of Certificate 1 Rural Skills (Aquaculture) to a group of community members. This had proven to be very successful.

Recommendation 4: *For future short courses there needs to be a greater focus on developing a style and method that incorporates hands-on activities and discussion.*



Examining a marron specimen

7.5 Formalising the course - objectives and competencies

Whether to formalise the course that was delivered at Gregory Springs Farm or to keep it less formal and flexible is an issue to think about in the future. It is important to identify and clarify the purpose and objectives of the course. This has implications for what units will be delivered and what outcomes are to be achieved with the course. It is also important to clearly define the competencies that students will achieve on completion of each course unit. While the short course delivered at Gregory Springs Farm was not an accredited course and was based on University or TAFE accredited units the time involved and the number of topics covered precluded any opportunities for students to develop competencies in any particular procedures or techniques.

An opportunity exists for CSML and Central West TAFE to develop a short course or module which incorporates, for example (1) integrated aquaculture and farm management, (2) enterprise and/or socio-economic planning, development and implementation, and (3) leadership, governance and community management. This course or module could be delivered to Aboriginal communities as the training component of any economic or community development initiatives relating to aquaculture.

Recommendation 5: *A review of current courses that incorporate aquaculture, plant cultivation, enterprise development and governance, should be conducted with the aim of creating a short course in integrated aquaculture specifically designed for Aboriginal people.*

7.6 Linking the scientific with the social, cultural, economic and environmental

Clearly Aboriginal people are interested in integrated aquaculture but want more than just a workshop or a training course. They want to be able to use the information and knowledge gained from the workshops or training as the basis of moving towards

establishing aquaculture enterprises or community development projects with a socio-economic focus. However, this training should be contextualized within the social, cultural and economic framework of the community. For example aquaculture training may be very interesting, but how useful is it if participants are not able to use that information to move forward to establish business enterprises or community projects?

There are many social, cultural, economic and environmental factors that prevent Aboriginal people from turning information and knowledge into new opportunities. They may have low levels of skill and education or may lack management or entrepreneurial skills or there may be other barriers such as lack of land base, inability to attract funds or investment, no or limited access to natural resources, no role in decision making about the environment and so on. Certainly efforts were made at the recent workshop to be aware of these aspects of Aboriginal life. However there is a need for the Aboriginal participants to focus on identifying the barriers, discussing and finding solutions and identifying how they can take advantage of opportunities.

There also needs to be a focus on the issue of community based aquaculture enterprises, particularly looking at success factors for culturally based community enterprises/socio-economic projects that operate within an economic system which is based on private ownership of resources, self-interest, competition, reliance upon the market system, and so on.

Recommendation 6: *Integrated aquaculture training must be contextualised within the social, cultural, economic and environmental aspects of Aboriginal life.*

7.7 Protecting and using Aboriginal knowledge

Initiatives aimed at creating networks to share knowledge between Aboriginal people and the wider society need to respect the right of Aboriginal people to own, control, manage, protect and use their traditional knowledge. This also includes the right of Aboriginal people to receive fair and equitable compensation and/or benefits for the use of their knowledge.

The issue of obtaining Aboriginal knowledge about plants and then putting that knowledge into the public arena on the basis of offering someone or a sector of society a new plant to commercially cultivate was discussed informally by some Aboriginal participants at the workshop. The issue was raised in relation to the ethical implications of a researcher obtaining traditional plant knowledge from Aboriginal people with their consent, and then on the basis of that knowledge conducting a study of that plant with a view to exploiting its properties for commercial gain, without allowing Aboriginal people to have first use of that knowledge for their own commercial gain or without protecting that knowledge so it can be used by Aboriginal people. This could amount to exploitation of Aboriginal people.

Such research should be offered to Aboriginal people to place them on an equal footing to commercially exploit their knowledge and the mainstream scientific knowledge in regards to plants. This issue is also being debated within the Desert

Knowledge CRC and a policy for protection of the intellectual property rights of traditional knowledge holders is being developed.

Recommendation 7: *Initiatives aimed at creating networks to share knowledge between Aboriginal people and the wider society need to respect the right of Aboriginal people to own, control, manage, protect and use their traditional knowledge. The right of Aboriginal people to receive fair and equitable compensation and/or benefits for the use of their knowledge must also be respected.*

7.8 CSML Curtin University, Central West TAFE and Frank Mauger Collaboration

The Curtin University CSML and Muresk Institute team, Central West TAFE and Frank Mauger collaboration was a success. Each brought particular skills, knowledge, resources and expertise into the collaboration. For example Frank Mauger has a fish farm and has practical hands-on advice. CSML and Muresk staff have expertise in integrated and inland aquaculture, capacity building, Aboriginal knowledge and enterprise development, research and teaching capacity, facilitation and entrepreneurial skills. Central West TAFE has expertise in aquaculture, has teaching resources, and has teaching and research capacity and have developed an effective model of teaching and learning with Aboriginal people.

This combined skill, knowledge, expertise and resource is required to support, mentor and build Aboriginal knowledge and skills, assist develop local enterprises or community development projects, assist Aboriginal people engage with mainstream industry partners and support and sponsor future training and networking initiatives.

Recommendation 8: *CSML and Muresk staff from Curtin University, Central West College of TAFE staff and Frank Mauger should continue to work together to assist facilitate the development of integrated aquaculture ventures with Aboriginal people. Facilitation emphasises advocacy, networking, training, technical support and monitoring.*



Ryan showing Darryl how to determine the sex of a marron

8. Conclusions

The Aboriginal Integrated Aquaculture Project is an exciting project with significant potential. It has the support of Aboriginal groups from a number of different communities and also has the support of CSML and Muresk Institute, Curtin University, Central West TAFE and Gregory Springs Fish Farm, Northampton, who have the skill, knowledge, expertise and teaching/learning resources to carry the project further.

The basis of an Aboriginal networking structure has been established. Certainly there was a view and interest to develop an Aboriginal networking cooperative, which will oversee and drive the capacity development approach. This will be supported by the collaborative efforts of the other participating agencies. This is a developmental approach to improving the socio-economic situation of Aboriginal communities through a focus on enhancing skills of Aboriginal people through training and providing mentoring and technical assistance in enterprise development. There is also an opportunity to create a link between health and aquaculture, through the cultivation of fish as a food for community members, which can assist aboriginal communities improve their well being.

9. Future Actions

There is commitment from all parties to take this project forward. Three key future activities were identified:

1. **Strategic planning** – There needs to be a planning process undertaken in each participating Aboriginal community to identify their aspirations, define their goals and objectives, identify resource needs and identify where funding and resources can be obtained.
2. **Integrated aquaculture network** – A network of Aboriginal communities interested in developing integrated aquaculture ventures should be established. Another training and development workshop should be held. The purpose of this workshop and future workshops would be to bring the Aboriginal groups together to share ideas and information, acquire knowledge and skills, identify enterprise or socio-economic project opportunities and to assist the Aboriginal groups develop these projects.
3. **Enterprise development projects** – local Aboriginal community enterprise or socio-economic projects should be identified and funds and other resources sought to assist those communities develop and establish projects.

The next phase of the project will be to implement the project outcomes and recommendations and undertake ongoing facilitation and management of project outcomes. It is planned that the CSML will work with Central West College of TAFE staff to facilitate and manage:

- the provision of technical information;
- networking and information sharing;
- support and mentoring to Aboriginal groups;
- access to industry and marketing advice.

Resources for these activities will be sought through funding applications to such agencies as the Indigenous Land Corporation, NHT, Greening Australia and, if applicable, local government or research funding agencies.

The support of Government Agencies, the Private Sector, Civil Society Organisations and Community Development Employment Projects are crucial for the success of this project.

10. Acknowledgements

The funding and support of the following sponsors are gratefully acknowledged:

- Indigenous Land Corporation
- Centre for Sustainable Mine Lakes
- Central West College of TAFE
- Mid West Development Commission
- Desert Knowledge CRC

Appendix 1



INTEGRATED AQUACULTURE WORKSHOP

Integrated Aquaculture Course: Wednesday November 16th 2005

9:00am - 9:15am INTRODUCTIONS

- 9.15am – 9.30am **General Aquaculture**
Dr Ravi Fotedar, CSML & Muresk Institute, Curtin University
- 9.30am – 11.00am **Water Quality: General & Pond visit**
Mr Glenn Varley,

11:00am - 11:30am TEA BREAK

- 11.30am – 1:00pm **Live feeds: General Intro, Types & Decapsulation of cysts**
Mr Shane Hartney, CSML & Muresk Institute, Curtin University

1:00pm - 1:45pm LUNCH

- 1.45am – 2:30am **Management Styles: General, Types & Levels**
Mr Shane Hartney, CSML & Muresk Institute, Curtin University

2:30pm - 3:00pm TEA BREAK

- 3.00am – 4:30am **Enterprise Planning & Development**
Mr Darryl Cronin,

4:30pm - 5:00pm DISCUSSIONS

INTEGRATED AQUACULTURE WORKSHOP

Integrated Aquaculture Course: Thursday November 17th 2005

- 9:00am - 9:30am **Systems Designs: Flow through & Recirculation**
Mr Shane Hartney, CSML & Muresk Institute, Curtin University
- 9.30am – 11:00am **Marron Aquaculture**
Dr Michael Cheah,

11:00am - 11:30am TEA BREAK

- 11.30am – 12:30am **Live Feeds: Hatching success**
Mr Shane Hartney, CSML & Muresk Institute, Curtin University

12:30pm - 1:45pm LUNCH

- 2:00am – 3:30pm **Travel to Seahorse Farm**
- 3:30am – 4:30pm **Tour**
- 4:30am – 6:00pm **Travel back to Northampton**

Appendix 2



INTEGRATED AQUACULTURE WORKSHOP

Integrated Aquaculture Seminar: Friday November 18th 2005

8:00am - 8:45am REGISTRATION

Chairperson: *Prof Louis Evans*

8.45am – 9:00am

Welcome & Introduction

Mr Murray Criddle, MLC, Agricultural Region

9:00am – 9:30am

Introduction to Aquaculture technology including inland saline aquaculture

Dr Ravi Fotedar, CSML & Muresk Institute, Curtin University

9:00am – 10:00am

Polyculture techniques for freshwater crayfish and fish

Tim Storer, CSML & Muresk Institute, Curtin University

10:00am – 10:30am

Suitability of water source for aquaculture

Craig Tuesley, Natural Resource Management Officer, Geraldton DoE

10:30am - 11:00am MORNING TEA

Chairperson: *Dr Michael Cheah*

11.00am – 11:30am

Mid-West Indigenous aquaculture project report

Ryan McDonald, Central West TAFE

11:30am – 12:00

Propagation & cultivation of native plants

Dr Geoff Woodall, CSML & UWA Centre for Natural Resource Management

12:00 – 12:30pm

Farmer's viewpoint: Main issues for consideration

Frank Mauger, Rod Medden, Mid-West Region

12:30pm - 1:45pm LUNCH

Chairperson: *Prof Louis Evans*

1:45pm – 2:00pm

Groups session introduction

Prof Louis Evans, Centre for Sustainable Mine Lakes

2:00pm – 2:30pm

Starting a business

Debra Buckle, Mid-West Business Enterprise Centre

2:30pm – 3:30pm

Small groups session: Developing a networking and business plan for an aquaculture venue

3:30am - 3:45pm AFTERNOON TEA

Chairperson: *Dr Ravi Fotedar*

3:45pm – 5:00pm

Plenary

5:00pm

Close

Appendix 3

Aboriginal Workshop Participant Comments

Comments were as follows:

- The course is an eye opener on what could be done, but it will take time.
- It is too late for me, but younger people should take it forward.
- The lecturers knew what they were presenting.
- Good presentations get responses from people.
- Science must be kept at an understandable level.
- To make the information useful need to keep having workshops at venues where there are aquaculture projects.
- Listening to people is not that interesting, need more activities to involve people.
- Franks perspective is good as it was a hands-on view of someone doing aquaculture farming.
- The course is good. I found out things to take back.
- It is a long day, need to break up course delivery with activities.
- I can use the information, but am not right into aquaculture as yet.
- The course is alright because it is talking about the aquaculture project in Yalgoo.
- I understand the science okay, but prefer doing activities.
- The course is useful because it reinforces what we are already doing.
- The course is thought provoking. It is food for thought on how to set up a farm.
- It is good to network with other people.
- The (Aboriginal) cooperative has to make a difference.
- There is too much talk. There should be more hands on activities. The information would sink in better.
- It would be good if we can see marron. I have never seen marron as big as this (the marron in the tank).
- How long does it take for marron to get that big? I would like to get an idea of what marron size to grow.
- I would like someone to work with us to find funds and write submissions.
- We know what we want, but don't have the skills to find funds or write submissions.
- We need someone who can understand what we want and to put that into a submission.
- We have tanks in a shed but don't own them. Now TAFE wants to take the tanks away.
- There has only been a little bit of discussion on setting up an enterprise.

- The question is, how do we get to the stage of setting up an enterprise.
- The course was interesting, aquaculture is something I would like to get into.
- Working cooperatively will give us a stake in the industry and to share information and knowledge.
- The course was interesting, stimulating and informative. It is something I can relate to.
- It is a brilliant idea for CDEP. They should take up aquaculture.
- There is a lot of talking and well wishing but it is not backed up with action.
- This knowledge is being opened up for farmers who will have an advantage over us.
- It is not that Aboriginal people are lazy (in regards to setting up enterprises), we are not getting a fair go.

Appendix 4

Outcomes and Benefits of the Project (as detailed in the Strategic Project Plan presented to the Indigenous Land Corporation)

1. Outcomes

Specific outcomes will be related to enterprise development and employment outcomes. These will be:

- Increased knowledge, skill and confidence to pursue enterprise opportunities in integrated aquaculture;
- Relationships with industry and resource people for business development advice, support and mentoring;
- Relationships with local aquaculture farmers for practical and technical advice as well as business management advice;
- The establishment of a network of Aboriginal and other people to support enterprise initiatives, share information and engage in cooperative marketing.

2. Benefits

Specific benefits to Aboriginal people will be as follows:

- Increased knowledge and skill in integrated aquaculture;
- Improved confidence to engage with industry and other resource people;
- Business development advice, support and mentoring;
- Relationships with local aquaculture farmers for practical and technical advice;
- A network to support enterprise initiatives, share information and engage in cooperative marketing.

There will also be other benefits relating to:

- The acquisition of knowledge and practice for sustainable use of natural resources through commercial enterprise.
- The acquisition of new knowledge and practice for sustainable environmental management of Aboriginal land.
- The recognition and acknowledgement of Aboriginal knowledge, innovation and practice in regards to natural resource use and management.
- Greater awareness of Aboriginal intellectual and cultural property as it relates to natural resources.
- The flow-on to community of increased confidence and awareness of the Aboriginal participants.