Final Technical Report

Study on Aquaculture Policy Frameworks in the Pacific Region

Project ref. N°: PAC-1.2-B4 REL

Region: Pacific

September 2013

Assignment by:

"The content of this document does not necessarily reflect the views of the concerned governments."
Study on Aquaculture Policy Frameworks in the Pacific Region

FINAL TECHNICAL REPORT (DRAFT)

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Acronyms used

ACIAR...........Australian Centre for International Agricultural Research
ACP..............African Caribbean Pacific
AIFU..........Aquaculture and Inland Fisheries Unit (of NFA in PNG)
CA............Contracting Authority
CTI............Coral Triangle Initiative
CU............Coordination Unit
DAL.........Department of Agriculture and Livestock (PNG)
DEC.........Department of Environment and Conservation (PNG)
DFTR.........Draft Final Technical Report
EC............European Commission
EDF............European Development Fund
FAME........Division of Fisheries, Aquaculture and Marine Ecosystems
FAO.........Food and Agriculture Organisation
FFA.........Forum Fisheries Agency
FR.............Final Report
FTR............Final Technical Report
GIFT.........Genetically Improved Farmed Tilapia
HCD.........Human Capacity Development
IR............Inception Report
ITR.............Interim Technical Report
KE............Key Expert
MCS.........Monitoring, Control & Surveillance
MECM.......Ministry of Environment, Conservation and Meteorology (Solomon Islands)
MFMR.......Ministry for Fisheries and Marine Resources (Solomon Islands)
MoU........Memorandum of Understanding
MSSIF.......Mekem Strong Solomon Islands Fisheries Programme
NADMAC.....National Aquaculture Development and Management Advisory Committee (PNG)
NAQIA......National Agriculture Quarantine and Inspection Authority (PNG)
NARDTC.....National Aquaculture Research Development and Training Centre
NFA............National Fisheries Authority (PNG)
NFMRA......Nauru Fisheries and Marine Resources Authority (Nauru)
NGO............Non-Governmental organisation
NPOA.........National Plan of Action
PDF............Project Development Funding (PNG)
PICT........Pacific Island Countries and Territories
PNG..........Papua New Guinea
PSID.........Provincial Support & Industry Development (of NFA in PNG)
R&D.........Research and Development
RFU.........Regional Facilitation Unit
SPC............Secretariat of the Pacific Community
SPREP........Secretariat of the Pacific Regional Environment Programme
Acknowledgements

PBLH would like to thank a number of people who have assisted with the two field missions. Firstly we would like to thank Robert Jimmy, SPC Aquaculture Adviser, for his continued support to the team and liaison with the ACP Pacific aquaculture administrations. Thanks also to Genevieve Delahaie for her logistical support to the team and administrative preparations for the workshop.

Our visit to the Cook Islands was greatly assisted by Ben Ponia (Director MMR), Koroa (Kori) Raumea (Director of Inshore Fisheries and Aquaculture), Dorothy Solomon (Director of Pearling) and Richard Story. In addition industry members were most generous with their time including Raymond Newham of Ora Moana Ltd, George Ellis, CEO of the Cook Islands Pearl Authority, Tina Browne, Chair of the Cook Islands Pearl Authority and Temu Okatai, pearl farmer and businessman.

In Fiji our work was greatly assisted by various members of the Fisheries Department including Suresh Chand (Director of Fisheries), Shalendra Singh (Sr. Aquaculture Officer), Anand Prasad (Officer in Charge, Galoa Research Station), Visal Nadan (Fisheries) and Sam Mario (Manager, Naduruloulou Station). Tim Pickering and Avinash Singh from the Suva, SPC Aquaculture Unit were most generous with their time and information.

Thanks to Chris Ramofafia (Permanent Secretary) Alex Meloty and Rosalie Masu of MFMR in the Solomon Islands and Jacob Wani (Executive Manager, Aquaculture) of NFA in PNG.

Thanks also to William Eddison from the Forum Fisheries Agency, who provided a guest presentation to the workshop in Fiji on aquaculture regulation.

Our thanks go to Martika Fong and Pilar Maroto of PBLH for their organisation and administration of the training and validation workshop in Nadi over 10 – 13 September 2013.

Finally we would like to thank Augustine Mobiha of the ACP FISH II’s Pacific RFU for his support to the study.

Tim Huntington & Colin Shelley, September 2013
**Study on Aquaculture Policy Frameworks in the Pacific Region**

**Executive Summary**

**Background**

Policy-making can be defined as ‘the process by which governments translate their political vision into programmes and actions to deliver outcomes’. A solid, well-grounded and robust policy aquaculture framework is required as a basis for sustainable development and its contribution to food security and economic growth. A policy provides the well-considered sectoral goal and objectives that are essential for subsequent strategy and development planning.

To date aquaculture development in the Pacific Island region has largely occurred in a policy vacuum, and that this has undoubtedly contributed to the sector’s slow and uncertain growth since its inception after the Second World War. Indicators of this lack of policy direction include:

- A dearth of strategic analysis and resultant plans, resulting in both government and donor-led aquaculture development activities often having limited commercial viability or long-term economic sustainability;
- The wide-spread introduction of exotic species into many river and coastal systems with likely irreversible effects; and
- A marked reluctance for private sector investment in aquaculture in the Pacific compared to other similar bio-geographic regions.

The purpose of this study was therefore to evaluate the policy-making needs of the 15 ACP countries in the Pacific Region and to provide a set of practical guidelines for developing an aquaculture policy framework. This study has been implemented by the ACP Fish II Programme with European Union (EU) funding.

**Approach**

A two person team was fielded by PBLH International Consulting over two main missions:

1. **Review of the current status of aquaculture policy and sectoral planning in the Pacific region**: this three week mission was undertaken in June 2013, with an initial visit to SPC in New Caledonia, followed by country visits to the Solomon Islands, Papua New Guinea, Fiji and the Cook Islands. In addition, questionnaires were sent to the other 11 ACP counties in the Pacific. The main purpose of this first mission was to speak to the fisheries administrations and other key public and private sector stakeholder to assess the current status of aquaculture policy and planning and to develop a gaps analysis to inform the drafting of a set of guidelines for aquaculture policy development in the Pacific Region.

2. **Validation of, and training in, the guidelines for aquaculture policy frameworks in the Pacific Region**: a four day workshop was convened in Nadi, Fiji over 10 – 13 September 2013. Fifteen persons participated in this workshop, which had a dual purpose to test and validate the guidelines, as well as provide initial training in their use. Following this workshop, the guidelines were finalised and subsequently published by SPC.

**Guidelines for Aquaculture Policy Frameworks in the Pacific**

A standalone document has been produced that is aimed at policy makers, government aquaculture administrators and interested stakeholders. It provides guidelines on how to develop, write and plan the implementation of aquaculture policy. It is deliberately concise in nature, and is intended to be a
Study on Aquaculture Policy Frameworks in the Pacific Region

practical reference document that provides a framework for ‘best practise’ in aquaculture policy development.
Study on Aquaculture Policy Frameworks in the Pacific Region

Following an introductory section, the guidelines are structured in three separate parts:

Part 1: Policy Development Processes. The first part provides practical guidelines on the process required to establish a policy based on robust information and to fully reflect the aspirations and needs of the sector as a whole. It includes advice on initiating the policy cycle and reflects on typical drivers that stimulate this process. It goes on to advise on how best to ensure an inclusive, participatory process and that a wide range of views are considered in policy development. It also ensures that aquaculture policy is consistent with other national policies, as well as with international and regional obligations. It also advises on any necessary sector review process that is needed to inform policy makers on the trends and direction of aquaculture development. The last part of these policy process guidelines includes practical steps in conducting an analysis of both the key policy issues related to aquaculture e.g., productivity, biosecurity, contribution to food security and ecological sustainable development, as well as the risks facing the sector from internal and external forces.

Part 2: Content of Aquaculture Policy. The second part of the guidelines provides advice on the content of aquaculture policy documents. Whilst it is recognised that there is no prescribed generic template for aquaculture policy documents, these guidelines provide a checklist of key policy components and guidance on how they might be used. The main components are as follows:

1. Goal and Objectives
2. Policy and Evaluation Timeframe
3. Sector Background
4. Consultations Undertaken
6. Risk Assessment
7. Capacity Development Needs
8. Identification of Implementation Processes and Pathways
9. Compliance and Impact Monitoring

Part 3: Aquaculture Policy Implementation. The purpose of a policy document is to present a statement of intent for development of the aquaculture sector. As such whilst it does not contain any detailed implementation mechanisms, it should outline the main implementation approaches envisioned. The purpose of this last part of the guidelines is to advise on the various implementation processes and pathways involved. This includes explaining the linkages between policy and subsequent stages of strategic and detailed development planning, as well as examining the main enabling actions that are required to implement policy. It also covers key areas such as policy impact monitoring and evaluation, as well as proving guidelines on building capacity to implement policy in the aquaculture sector.

Conclusions and Recommendations
The final session of the Workshop was aimed at identifying what further actions and support might be needed once the guidelines have been published and ACP Fish II support has effectively finished. The main recommendations were as follows:

1. The awareness of the need for aquaculture policy should be raised at a senior government level, as there is insufficient emphasis and resources allocated to policy-making at present.
2. The aquaculture policy development skills, of the region’s mainly technically-educated government aquaculture officers, tasked with developing aquaculture policy and strategic planning need to be better developed.

3. There is a need for assistance in project management and subsequent mentoring by experienced specialists in aquaculture policy development.

4. That SPC develop an aquaculture policy toolkit and internet forum for regional discussions and debates on aquaculture policy and industry development.
1 BACKGROUND

1.1 BACKGROUND

A solid, well-grounded and robust policy framework is required as a basis for sustainable development and its contribution to food security and economic growth. Whilst this statement is generic, it has a particular resonance with aquaculture, where poor policy underpinning can lead to environmental degradation, socio-economic inequities and reduced economic growth. There are a number of characteristics of ‘good’ policy, including:

- **Strategic** – looks ahead and contributes to long term government goals
- **Outcome focused** – aims to deliver desired changes in the real world
- **Joined up** – works across organizational boundaries
- **Inclusive** – is fair and takes account of the interests of all
- **Flexible and innovative** – tackles causes, not symptoms and is not afraid of experimentation
- **Robust** – stands the test of time and works in practice from the start.

There is a notable absence of specific aquaculture policies at both regional and national levels in the Pacific region. Much of aquaculture policy-making is embedded in wider fisheries sectorial planning and is often production-focused, rather than providing a platform for sustainable aquaculture development.

Policies may consist of formal and well documented legislation and/or regulations, economic instruments and public investment programmes, or more informal decisions, used to achieve a given objective. Evans *et al*\(^1\) prepared an comprehensive review of aquaculture policy and legislation in the Pacific island Region in 2003 for SPC, which included recommendations for a ‘Phase Two’ project that utilises their 2003 report as a foundation but includes discussions, workshops, meetings and a survey questionnaire conducted with major stakeholders and licence holders as a useful way of progressing the policy development process. This is the launch pad for this current project.

As stated by the ToR, the purpose of this current work was to assess the adequacy of aquaculture policy frameworks of Pacific ACP states with a view to developing an enabling environment for the sustainable development of aquaculture in the Pacific region. This was achieved through a new review of national and regional aquaculture policies in the ACP Pacific states (based on the work by Evans *et al*), followed by the preparation of guidelines and training material. The consultancy culminated with a stakeholder validation and training workshop to both ensure that the guidelines were robust, as well as to build a basic capacity in aquaculture policy planning in the participants.

In the conduct of this assignment, the consultants worked closely with SPC, FFA, all countries fisheries administrations/agencies, the countries aquaculture fisheries associated stakeholders as well as relevant donors, donor funded programmes and NGOs to gather relevant information and ensure proper coordination of activities.

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1.2 PROJECT DESCRIPTION

1.2.1 Geographical area to be covered

The project covered all the Pacific ACP states, namely; Cook Islands, Federates States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and Timor-Leste.

1.2.2 Project objectives

According to the ToR, the overall objective and the purpose was:

- To contribute to the sustainable and equitable management of fisheries in ACP states, thus leading to poverty alleviation and improving food security in ACP States
- To assess the adequacy of aquaculture policy frameworks of the Pacific ACP states with a view to developing an enabling environment for the sustainable development of aquaculture in the Pacific region

1.2.3 Project results

In line with the ToR, the expected results were:

- Regional and national policy frameworks governing aquaculture in the ACP Pacific states reviewed and assessed;
- Guidelines for developing aquaculture policies frameworks developed and validated;
- Training module on aquaculture policy guidelines developed;
- Training using approved module on aquaculture policy guidelines delivered;
- Awareness among PICT policymakers about the policy elements that need to be incorporated into national aquaculture policies increased.

1.2.4 Target Groups

The target groups for this project were the aquaculture administrations/agencies, potential investors, and aquaculturists involved in the development of national aquaculture fisheries policy instruments.
2 APPROACH TO THE ASSIGNMENT

2.1 OUTLINE OF THE APPROACH

2.1.1 General approach

Our general approach was as follows:

1. To build upon Evan et al’s 2003 review of aquaculture policies in the Pacific region, focusing on the 15 Pacific ACP states

2. To base the guidelines on established good practices, such as FAO Technical Guidelines on Improving Planning and Policy Formulation and Implementation for Aquaculture Development as well as other regional and international examples

3. Extensive cooperation with the SPC Aquaculture Section in Nouméa to ensure we identified and captured regional and national aquaculture policy instruments (e.g. aquaculture policies, strategies and management plans) for each Pacific ACP State;

4. Further liaison with the SPC Aquaculture Section and the Pacific Islands Forum Fisheries Agency (FFA) Fisheries Management department in Honiara (which deals with policy and legal issues) in drafting the guidelines of national aquaculture policy frameworks.

5. The division of the work into three distinct phases:
   a. Phase 1: Information collection and country visits (field-based)
   b. Phase 2: Stakeholders Workshop preparation and delivery (development of guidelines and training support home-based, workshop delivery and guidelines finalisation field-based)
   c. Phase 3: Reporting and closure (home-based)

6. Fielding of a key expert team with excellent knowledge of the region and the subject, having both worked with the SPC and FFA in the past.

The aquaculture policy frameworks review took into account international and regional best practices as well as risk management factors in order to ensure fisheries resources' sustainable management, such as risks of translocation of aquacultures fisheries resources, minimising the introduction of disease agents and minimising the above risks' socio-economic impacts.

2.1.2 Project Organisation

The project was implemented over a five month period with a start on 3rd June 2013. Given the number of activities to be performed by the two Key Experts, it was important to draw an accurate project planning reflecting the different periods of the project realization and the associated activities. We therefore divided the project into three main phases over which the project was launched, implemented, and concluded as follows:

- Phase 1: Information collection and country visits
- Phase 2: Workshop preparation and delivery
- Phase 3: Reporting and Closure

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3 The proposed KE 1 specialist, Mr Tim Huntington, was a key resource person for the development of these guidelines. See http://www.fao.org/docrep/014/i0205e/i0205e00.htm for more details
Throughout the policy assessment, analysis and the Stakeholders’ Validation and Training Workshop, the consultant used the following learning approach:

- A participatory approach that ensured the stakeholders’ appropriation of the information and knowledge shared, and their ownership of thematics and trainings developed. As all participants to the workshop were professionals from the fisheries sector, on-the-job and hands-on training techniques were used to ensure immediate understanding and mastering of the delivered content whenever relevant. Eight different break-out exercises were run over the workshop.

- Encouraging interactions resulted in a greatly enhanced level of technical and personal understanding between key officials from the Partner States, which will be necessary to work further on the areas that still need to be jointly worked out.

The key experts spent the entire 1st phase on the field to collect all necessary documentation and information for the policy review, and carry country-visits and assessments. They visited Fiji, Papua New Guinea, Cook Islands, and the Solomon Islands, including a visit to the FFA. This first phase amounted to 56% of the total working days for an extensive field analysis and close collaboration with the SPC and the PICTs.

The second phase was partly home-based (workshop preparation) and field-based (workshop delivery and finalization). The experts developed aquaculture guidelines and training modules from home. These were then submitted to ACP Fish II and SPC for comment, before being finalised and distributed to the workshop participants. The experts then conducted a second field mission in Fiji in order to prepare and deliver the Workshop. They then finalized the aquaculture guidelines according to the workshop's outputs. This phase represented 40% of the total working days.

Finally, experts will work home-based to draft the Final Technical Report to be then finalised according to comments from the CU, RFU and beneficiaries with the help of the Consultant. This corresponds to the third phase and amounts to 4% of the total working days allocated.

Below, the table represents the partition of days held in the field and home-based:

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<tr>
<th></th>
<th>Key expert 1</th>
<th>Key expert 2</th>
<th>Total days</th>
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<tbody>
<tr>
<td>Field mission 1</td>
<td>18 WD 55%</td>
<td>16 WD 57%</td>
<td>34 WD</td>
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<tr>
<td>Home based</td>
<td>5 WD 15%</td>
<td>3,5 WD 13%</td>
<td>8,5 WD</td>
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<tr>
<td>Field mission 2</td>
<td>9 WD 27%</td>
<td>7 WD 25%</td>
<td>15 WD</td>
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<tr>
<td>Home based</td>
<td>1 WD 3%</td>
<td>1,5 WD 5%</td>
<td>3,5 WD</td>
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<tr>
<td>Total days</td>
<td>33 WD 100%</td>
<td>28 WD 100%</td>
<td>61 WD</td>
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For details, see Figure 1: Actual Activity Work Plan overleaf.

3 COMMENTS ON TERMS OF REFERENCE

The Terms of Reference were well constructed and proved to remain fully relevant over the full term of the study.
# Figure 1: Actual Activity Work Plan

<table>
<thead>
<tr>
<th>Activities</th>
<th>KE1 - TL</th>
<th>KE2</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
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<tbody>
<tr>
<td>1: Information collection and country visits</td>
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<td>Activity 1.1. Initial briefings with ACP Fish II and SPC</td>
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<td>Activity 1.2. Identify and collect policy documents and information</td>
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<td>Activity 1.4. Consultations to selected countries and FFA (Fiji, PNG, S.I., Cook Islands)</td>
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<td>Activity 1.5. Interim Technical Report</td>
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<td>Activity 1.6. Review and Assess national aquaculture policy documents and information</td>
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<td>2: Workshop preparation and delivery</td>
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<td>Activity 2.1. Develop guidelines for developing national aquaculture policy frameworks</td>
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<td>Activity 2.2. Prepare an Aquaculture Policy Training Module</td>
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<td>Activity 2.3. Preparation of the Stakeholder Workshop</td>
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<td>Activity 2.5. Draft Final Technical Report and finalisation of guidelines</td>
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<td>3: Reporting and Closure</td>
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<td>Activity 3.1. Submit Draft Final Technical Report</td>
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<td>Activity PM1: Reports administrative and financial management + translation</td>
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<td>Activity PM3: Communication and Visibility activities</td>
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<table>
<thead>
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<th>KE1</th>
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<tr>
<td>33</td>
<td>28</td>
<td>61</td>
</tr>
<tr>
<td>62%</td>
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</tbody>
</table>

FB: Field Based  
HB: Home Based  
KE: Key Expert  
TL: Team Leader  
FD: Deliverable / Milestone  
IT: International Trips  
WD: Working Day
## 4 ORGANISATION AND METHODOLOGY

### 4.1 DELIVERY OF TERMS OF REFERENCE

<table>
<thead>
<tr>
<th>Specific Activity (in ToR, Section 4.2.1)</th>
<th>Evaluation response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Briefing with the ACP Fish II Programme (RFU for the Pacific) and SPC in Nouméa, New Caledonia;</td>
<td>A briefing was undertaken with Robert Jimmy, SPC Aquaculture Adviser on Monday 3 June 2013 in Nouméa and Augustine Mobiha, the ACP Fish II RFU Project Manager in Honiara on Monday 10 June 2013.</td>
</tr>
<tr>
<td>2. With support of the SPC Aquaculture section, the consultant will identify and collect regional and national aquaculture policy instruments for each Pacific ACP State;</td>
<td>A full set of policy plans, strategies and development plans were collected. These were compiled and analysed, and the key details entered into a metadatabase (see Error! Reference source not found.).</td>
</tr>
<tr>
<td>3. Consult with the Government agencies involved in aquaculture policies development, the aquaculture industry and other aquaculture stakeholders in each ACP Pacific State through the internet, telephones and faxes;</td>
<td>Contact was made with the aquaculture departments of all the 15 Member Stages via SPC. This was followed up by a policy questionnaire (see Error! Not a valid result for table.) and the responses summarised in the Interim Technical Report (see Error! Not a valid result for table.).</td>
</tr>
<tr>
<td>4. Make country visits to selected countries of Fiji, PNG, Solomon Islands and Cook Islands to identify and collect national aquaculture policy framework information and determine and discuss issues the aquaculture sector is confronted with;</td>
<td>Visits were made to Fiji, PNG, the Solomon Islands and the Cook Islands. A detailed analysis of the status of aquaculture policy development and subsequent planning was undertaken and reported in the Interim Technical Report (see Error! Not a valid result for table.).</td>
</tr>
<tr>
<td>5. Review, assess and analyse the instruments and information gathered under items 2, 3 and 4 so as to identify the gaps in the existing policy frameworks and priority areas that need to be addressed in the guidelines and training module on developing national aquaculture policies;</td>
<td>Based on the country visits and questionnaire, a structured and semi-quantitative analysis of policy gaps was undertaken and presented in the Interim Technical Report (see Error! Not a valid result for table.).</td>
</tr>
<tr>
<td>6. Prepare, in consultation with FFA (Legal section) and SPC (Aquaculture section), draft Guidelines to support the devising of national aquaculture policy frameworks;</td>
<td>Draft guidelines were prepared in consultation with FFA and SPC. The final draft – as validated at the Nadi workshop (10-13 September 2013) can be found in Appendix G.</td>
</tr>
<tr>
<td>7. Prepare a training module based on the draft guidelines in item 6 to devise aquaculture policy frameworks in the Pacific region;</td>
<td>A PowerPoint-based training module was prepared, which precisely followed the structure of the draft guidelines. This module consisted of formal training presentations followed by participant break-out sessions (8 in total). The PowerPoint presentations can be found in the Workshop Report in Appendix J.</td>
</tr>
</tbody>
</table>
8. Organize, in consultation with the RFU and SPC, a regional Validation and Training workshop to be held in Fiji to train selected aquaculture and policy officers in drafting Aquaculture National Policy documents. Discuss and validate the draft guidelines to support the devising of such Aquaculture national policy documents;

A four day training/validation workshop was undertaken at the Tanoa International Hotel in Nadi, Fiji, over 10 – 13 September 2013. Fifteen persons participated in this workshop, including representatives from WWF, SPC and USP. In addition, a guest lecturer from the FFA Legal Department, Mr. William Eddison, presented a paper on aquaculture legislation.

9. At end of the workshop, finalise the Guidelines for developing National Aquaculture Policy frameworks.

Based on the validation process in the workshop, the guidelines have been finalised (subject to review of this draft Final Technical Report).

4.2 CONDUCT AND DETAILS OF THE ASSIGNMENT

<table>
<thead>
<tr>
<th>Description</th>
<th>Phase 1: Information collection and country visits</th>
<th>Phase 2: Workshop Preparation and Delivery</th>
<th>Phase 3: Reporting and Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives</td>
<td>Mission well planned Participants identified, beneficiaries aquaculture policy analysed</td>
<td>Workshop carried out successfully</td>
<td>Beneficiaries' capacities are strengthened</td>
</tr>
<tr>
<td>Activities</td>
<td>1.1 Briefings ACP Fish II/SPC 1.2 Identify and collect policy documents and information 1.3 Inception Report 1.4 Consultations to selected countries and FFA (Fiji, PNG, S.I., Cook Islands) 1.5 Interim Technical Report 1.6 Review and Assess documents and information</td>
<td>2.1 Develop guidelines for aquaculture policy development 2.2 Prepare an Aquaculture Policy Training Module 2.3 Preparation of the Stakeholder Workshop 2.4 Stakeholders Validation and Training Workshop 2.5 Draft Final Report preparation and guidelines finalisation</td>
<td>3.1 Draft Final Technical Report 3.2 Final Technical report 3.3 Final Report</td>
</tr>
</tbody>
</table>
4.2.1 Description of activities

**Mobilisation.** Mobilisation took place from the home office and included a desk review of available information, liaising with the key client bodies (the RFU, SPC and FFA) and then travel to the place of posting in Nouméa, New Caledonia. This time was classed as non-working time.

**Phase 1 Information collection and country visits**

Once in Nouméa, the consultant team undertook the first main regional activities. The purpose of this first phase was to provide the team with sufficient information to compile the guidelines and training material under Phase 2.

The following tasks were undertaken:

<table>
<thead>
<tr>
<th>Activity 1.1 Briefings ACP Fish II/SPC</th>
<th>Inputs</th>
<th>KE1 1WD</th>
<th>KE2 1WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Project’s preparation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This activity was undertaken on the first day in post and was intended to introduce the team and review the background, objectives and work plan for this assignment. This included:

- Assessing the current information holdings of the SPC Aquaculture Section
- Reviewing and agreeing on an approach to access further information on national policies and legislation relevant to aquaculture. This included direct contact with key national personnel, as well as launching a brief questionnaire for all 15 ACP PICTs that identified the presence, content and processes for aquaculture policy development in each country.
- Reviewing and finalising the country visit programme by the two KEs.
- Identifying the key regional and national stakeholders in aquaculture development (including industry, trade organisations and NGOs) and agreeing a consultation plan and communication strategy.
- Agreeing on the timing and outline programme for the Stakeholder Validation and Training Workshop to be held in Phase 2; getting an introduction to key stakeholders and institutions to be visited during the country visits and potential participants to the workshop.
- Agreeing on the project’s timeline, deliverables and project communication procedures.

<table>
<thead>
<tr>
<th>Activity 1.2 Identify and collect policy documents and information</th>
<th>Inputs</th>
<th>KE1 4 WD</th>
<th>KE2 3,5 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Documents and information review; Metadatabase</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Following the Inception Briefing, the team worked with SPC’s Aquaculture Section to compile a metadatabase of information related to regional and national aquaculture policy development and implementation in the ACP Pacific states (see Error! Not a valid result for table. and Appendix I). This metadatabase was a simple Excel-based database classifying all the documents (e.g., in terms of its content type i.e. policy statement, strategy, action plans, legislation, etc.) that was intended to be the basic tool for the gaps analysis in Activity 1.6. (Review and Assess documents and information). This activity also enabled the Key Experts to gather relevant information from the PICTs member states they will not be able to visit by establishing contacts with local stakeholders and Fisheries Administrations representatives and government agencies.
**Activity 1.3 Inception Report**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 8 WD</th>
<th>KE2 8 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>I Inception Report</td>
<td></td>
</tr>
</tbody>
</table>

- As described in the ToRs, the Inception Report (see Error! Not a valid result for table.) presented a preliminary assessment of the national aquaculture guidelines and work plan. As the ToRs did not allocate any working time for this activity, it was conducted during the course of country visits and document review.

**Activity 1.4 Consultations to selected countries and FFA (Fiji, PNG, S.I., Cook Islands)**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 8 WD</th>
<th>KE2 8 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>I Consultations and information collation</td>
<td></td>
</tr>
</tbody>
</table>

- Once the information collation in activity 1.2 was underway, the team made visits to the following leading aquaculture nations in the region: the Solomon Islands, Papua New Guinea (PNG) and the Cook Islands. The purpose of these visits was to talk to key aquaculture policy makers, regulators and where possible, industry in order to firstly collect information relevant to the study and as importantly, to identify and discuss the key issues facing aquaculture policy makers in the region.

- The KE1 met with the Forum Fisheries Agency (FFA) in Honiara. A key subject for discussion was the legal under-pinning of aquaculture in the Pacific region, as well as the gaps at both national and regional levels, possible over-laps and contradictions and the basic elements for a common legal framework for aquaculture in the Pacific.

**Activity 1.5 Interim Technical Report**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 2 WD</th>
<th>KE2 1 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>I Interim Technical Report</td>
<td></td>
</tr>
</tbody>
</table>

- Once the country visits were completed, the KE’s prepared an Interim Technical Report. This report, which was not required in the Terms of Reference, was a brief summary of the work undertaken over Phase 1 provided a detailed work plan for Phases 2 and 3. It described the findings of field visits and consultations and the results of initial document review and analysis. It also provided an outline of the guideline structure, as well as that of the stakeholder validation and training workshop. It also confirmed the timing, location and proposed participation of the workshop. A copy is contained in Appendix D.

**Activity 1.6 Review and assess documents and information**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 3 WD</th>
<th>KE2 2,5 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>I Country reviews, matrix-based gaps analysis, guidelines priorities and capacity-building needs</td>
<td></td>
</tr>
</tbody>
</table>

**Review and analysis of visits and information.** This task started immediately after Activity 1.2 and continued through the country visits, parallel to information collation. The following analytical outputs were included in the Interim Technical Report:

- A country by country review of the four ACP Pacific states visited, examining the presence and nature of aquaculture policy content and implementation mechanisms. This focused on the policy statements themselves, the processes for developing policy (e.g., participation and review processes) as well as the nature of basic policy implementation approaches such as strategies, management and action plans, research plans and industry responses.

- A matrix-based gaps analysis of policy comment, process and implementation. This was based upon key indicators derived from the *FAO Technical Guidelines on Improving Planning and Policy Formulation and Implementation for Aquaculture Development*.

- Identification of the priority areas that need development within the guidelines and the training and capacity-building needs to support this.
4.2.2 Phase 2: Workshop preparation and delivery

This second phase was partly home-based (workshop preparation): it was timed to start once the Interim Technical Report has been reviewed and finalised. Led by the KE1, the team first prepared a set of guidelines for aquaculture policy development and secondly developed a training module to accompany this (in the form of PowerPoint presentations and breakout exercises). The experts then prepared and delivered a "Stakeholder Validation and Training Workshop" held in Nadi, Fiji.

Activity 2.1 Develop guidelines for aquaculture policy development

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 2 WD</th>
<th>KE2 2 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Draft aquaculture policy development guidelines</td>
<td></td>
</tr>
</tbody>
</table>

These guidelines are intended to be a framework for a comprehensive aquaculture policy. The guidelines therefore included:

1. Content of policies (objectives, technical scope, etc.)
2. Processes for policy development and review (stakeholder participation, review and updating, etc.)
3. Policy implementation mechanisms and pathways (e.g., development of time-bound strategies, action plans and management initiatives)
4. Legislation underpinning (securing user rights, environmental protection, enabling efficient and effective enforcement and compliance)
5. Linkages with wider national and regional development policies and strategies (needs to be coherent with the external e.g., wider sectoral policy environment at both national and regional levels)
6. Institutional roles and coordination (ensuring designation of lead and subsidiary roles, coordination and communication pathways both between sectors and vertically to local government).

Activity 2.2 Prepare an Aquaculture Policy Training Module

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 3 WD</th>
<th>KE2 1,5 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Aquaculture Policy Training Module</td>
<td></td>
</tr>
</tbody>
</table>

This second task saw the development of training module aimed at assisting national aquaculture and policy officers progress aquaculture policy development at national level. The module was based on the approved/revised guidelines. We provided an interactive, hands-on approach with a combination of training sessions, group development work (where participants apply the recently imparted training to their own national situations) followed by group presentations. This training module was integrated into the workshop.

Activity 2.3 Preparation of the Stakeholder Workshop

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 2 WD</th>
<th>KE2 2 WD</th>
<th>PBLH backstopping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Flights, accommodation, transport, food, visas secured. Preparation finalised</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The purpose of this workshop was two-fold:

- **Stakeholder validation.** The first day was taken up presenting the results of the country review and subsequent gaps analysis and validating these with the participants. This validation process included a combination of open discussions, break-out groups addressing specific elements of the review (e.g., policy development, policy implementation, stakeholder involvement etc. – see activity 2.1 sub-components) and plenary presentations and discussions.

- **Training and on-going guideline validation.** Days 2 to 4 of the workshop was focusing on delivering the training module and in parallel validating the guidelines. As briefly discussed in activity 2.2, this consisted of a combination of presentations of the guidelines by the KE team, followed by breakout
group sessions that allowed the participants to apply the training to their own national conditions.

- The Consultant organised all workshop-related logistics\(^4\), including (i) organising the venue and communications (invitations, and workshop t-shirt designs), event kits & local transport; organised the participants' travels, visas, insurance, accommodation and payment and catering for a smooth implementation; and managed and paid daily allowance.

- A two day period was provided for the team to prepare for the four day workshop. This time was spent preparing the presentations, hand-outs and the structure of the break-out and group discussions.

### Activity 2.4 Stakeholders Validation and Training Workshop

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 2 WD; KE2 2 WD; PBLH backstopping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>20 participants take part in the 4-day workshop</td>
</tr>
</tbody>
</table>

The workshop was undertaken over a four day period in Nadi, Fiji. As required by the ToR, this include representatives from the 15 ACP Pacific countries plus other participants identified over Phase 1 (see Workshop Report and Participant list in Appendix J).

### Activity 2.5 Draft Final Report preparation and guidelines finalisation

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 2 WD; KE2 1 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Final Aquaculture Policy development guidelines</td>
</tr>
</tbody>
</table>

- Following the workshop, the KE team stayed in Fiji to finalise the guidelines for developing national aquaculture policy frameworks. These were embedded in the Final Technical Report.

### Phase 3: Reporting and Closure

#### Activity 3.1 Draft Final Technical Report

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 0,5 WD; KE2 0,5 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Draft Final Technical Report</td>
</tr>
</tbody>
</table>

- As described in the ToRs, the DFTR will present a description of achievements, problems, encountered, recommendations and technical proposals suggested by the consultant.

#### Activity 3.2 Final Technical Report

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 0,5 WD; KE2 0,5 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Final Technical Report (EN+PT)</td>
</tr>
</tbody>
</table>

- As described in the ToRs, the Final Technical Report included the changes and comments made by the CU/RFU, SPC and Fisheries Administrations. The FTR was translated into Portuguese.

#### Activity 3.3 Final Report

<table>
<thead>
<tr>
<th>Inputs</th>
<th>KE1 1 WD; KE2 0,5 WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Final Report</td>
</tr>
</tbody>
</table>

- As described in the ToRs, will include a short description of achievements including problems encountered, recommendations and suggestions together with the FTR and a final invoice and the financial report accompanied by the expenditure verification report.

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\(^4\) The PBLH Project Officer, Pilar Maroto provided on-site logistical support to the workshop participants in Nadi over 09 – 14 September 2013.
4.3 **VISIBILITY**

Visibility in the project has been promoted through the following:

1. Strict adherence to all ACP Fish II visibility requirements in terms of reporting and other outputs
2. Presentation of a t-shirt with the ACP Fish II, EU and SPC logos to workshop participants.
3. Two large workshop banners complying with ACP Fish II visibility requirements
4. Guidelines for aquaculture policy frameworks to be published by SPC, and will include full acknowledgements of the ACP Fish II programme and EU funding.
5 CONCLUSIONS AND RECOMMENDATIONS

The Terms of Reference (see Appendix A) proved to remain robust and relevant through to the end of the study. The country visits, as well as discussions with country representatives during the Nadi Workshop, reinforced the initial views that aquaculture development in the Pacific Island region has occurred in a policy vacuum, and that this has undoubtedly contributed to the sector’s slow and uncertain growth since its inception after the Second World War. Indicators of this lack of policy direction include:

- A dearth of strategic analysis and resultant plans, resulting in both government and donor-led aquaculture development activities often having limited commercial viability or long-term economic sustainability;
- A lack of budgetary commitment by national governments to the research and development of sustainable aquaculture in the region; and
- A marked reluctance for private sector investment into aquaculture in the Pacific compared to other similar bio-geographic regions.

Whilst it is recognised that a lack of policy direction is only one of a number of factors leading to the above indicators, it is firmly considered that greater emphasis on structured policy making, followed up by robust and realistic strategic and development planning, will contribute to steady and sustainable development of aquaculture. This conclusion was firmly supported by the workshop participants – who represented the majority of the aquaculture departments in the ACP Pacific Island region – who endorsed the guidelines for aquaculture policy frameworks produced by this study and committed to further addressing this challenge at a national level. SPC’s commitment to the process at regional level was also affirmed by their intention to publish and disseminate the finalised guidelines as part of their wider regional mandate.

The final session of the Workshop was aimed at identifying what further actions and support might be needed once the guidelines have been published and ACP Fish II support has effectively finished. The recommendations are as follows:

1. The guidelines are finalised and published by SPC.
2. A short summary of the project and the guidelines is prepared by the consultants as an executive summary for Ministers and other high-level government officials (the Executive Summary for this FTR has been adjusted to meet this suggestion).
3. The potential value of aquaculture policy development and the need to adequately resource it is raised at senior government level.
4. Consideration is given to developing the capacity of the mainly technically-educated aquaculture officers who are often tasked with developing aquaculture policy and strategic planning. Key areas include project design and management, monitoring and evaluation, as well as presentation skills.
5. Develop regional skills in impact monitoring and evaluation of aquaculture development. With current monitoring confined mainly to production indicators, better understanding of the impact of aquaculture on livelihoods, food security and the environment will be useful.
6. To support aquaculture officials in improving aquaculture policy and industry development in the region, consideration should be given to a mentoring program, utilising experienced aquaculture policy and industry development specialists.
7. As the main organisation coordinating aquaculture development in the region for ACP and non-ACP countries alike, it was recommended that SPC produce an aquaculture policy development toolkit. This might include these guidelines, with links to online resources, such as FAO’s National Aquaculture Legislation Overview (NALO) and an internet forum for regional discussion and debate on aquaculture policy and industry development.
Appendix A: Terms of Reference

TERMS OF REFERENCE
FOR
Study on Aquaculture Policy Frameworks in the Pacific Region
(PAC-1.2-B4 REL)
Study on Aquaculture Policy Frameworks in the Pacific Region

1. Background Information

1.1 Beneficiary country

The direct beneficiary countries of this contract are all ACP countries in the Pacific region namely: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and Timor-Leste.

1.2 Contracting Authority

ACP FISH II Coordination Unit
36/21 Av. de Tervueren
5th Floor
Brussels 1040, Belgium
Tel.: +32 (0)2.7390060
Fax: +32 (0)2.7390068

1.3 Relevant country background

Compared with fishing, aquaculture is currently of little commercial significance to the Pacific Islands, with one important exception, black pearl farming, which is virtually confined to eastern Polynesia. Elsewhere in the Pacific, considerable development is needed before aquaculture can be considered economically sustainable. Shrimp (Penaeus spp.) farming has been a focus of commercial development in several islands with varying degrees of success; tilapia (Oreochromis niloticus) aquaculture has entered the subsistence economy in some areas, and seaweed (Kappaphycus spp.) is a future commercial export prospect. The culture of other marine and freshwater species is, however, generally still at the experimental or “backyard” stage. The expansion of aquaculture in the Pacific will depend on providing better production methods for species currently being farmed, and techniques for propagating and growing the “new” species described above. These methods and techniques should be simple and flexible so that they can be adapted to the context of the Pacific Islands environment and to the market constraints (local and export markets). This approach should favour systems integrating fisheries and mariculture with low investment and operating costs and simple technical production processes. This should be done in association with pilot commercial-scale operations to test and demonstrate the economic viability of the methods proposed. This will require research combined with assistance, training and education programmes.

Pacific Island nations have many attributes that favour development of aquaculture and stock enhancement in the coastal zone. These are as follows: a great diversity of coral reef species which are in high demand, proximity to major aquaculture and seafood markets in Asia, availability of suitable grow-out sites in pristine habitats, geographic conditions which favour restocking and stock enhancement, a relatively inexpensive labour force, and a tradition of working with marine resources. Although these confer many advantages on the region in terms of aquaculture development and stock enhancement, there are still several constraints for such enterprises in the Pacific, which include limited domestic markets, high added-value export markets targeted, transport problems, socio-economic factors, fragile habitats, limited fresh water, and cyclones. Some of the best opportunities for aquaculture development in the Pacific are in the aquarium trade (coral reef fish, hard and soft corals), the live seafood markets (e.g. groupers, spiny lobsters, abalone, crabs) and the pharmaceutical industry (e.g. algae, sponges, soft corals). In all cases, the products are of high value and can be grown in small areas with relatively simple technology (*Adams, T., Bell, J. and Labrosse, P. 2001).

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Appendix A: Terms of Reference
1.4 **Current state of affairs in the relevant sector**

Aquaculture in the region is significant for the several contributions that it makes to Pacific Island Countries and Territories (PICTs) as an alternate source of nutrition to reduce fishing pressure on inshore and coastal fisheries; to reseed reefs of depleted stocks; to spread economic opportunities into outer islands; and as the basis for earnings at small and large scales of production.

Listed below are examples of aquaculture activities within selected Pacific island countries of; 1) Cook Islands, 2) Kiribati, 3) Papua New Guinea, 4) Fiji, 5) Vanuatu, 6) Solomon Islands and 7) New Caledonia;

1. Aquaculture activities on the Cook Islands are the dominant components of the fisheries sector. Aquaculture activities have contributed significantly to the Island’s economy, even more than the tuna fisheries, since its beginnings in the early 1950s. The Cook Islands principal commercial aquaculture activity has been the culturing of blacklipped pearl oyster (*Pinctada margaritifera*). Economic returns from the industry have been noteworthy since trials commenced on Manahiki, the islands’ main pearl producing center, since 1973. There are currently over 100 pearl oyster farms on the island of Manahiki with a similar number of smaller farms situated on Penrhyn. The total production from the two islands is estimated at approximately 1.5 million and 200,000 "seeded" pearl oysters respectively.

2. In Kiribati, milkfish is the major cultured fish species with two major farms operating out of Christmas Island and South Tarawa. Some export of milkfish occurs, however, the majority of fish harvested is consumed locally or made available as bait in the domestic tuna longline fishery from the government-operated farm on Tarawa. Production of *Kappaphycus alvarezii* (cottonii) seaweed is a major export earner for Kiribati and is a success story for aquaculture in the region. Harvests are increasing, and there are government initiatives to stimulate the industry throughout the nation. Production rates have consistently stood at around 1,000 mt/annum, worth in the neighbourhood of US$0.5 million F.O.B. The seaweed has been exported to Denmark and the government is currently exploring other offshore markets.

3. Commercial aquaculture is a new activity in Papua New Guinea (PNG), while there is a high interest in subsistence aquaculture. Approximately 6,000 small trout and carp farms have been established throughout the highlands and other inland areas and islands. There has also been success in the culture of local barramundi (*Lates calcarifer*). PNG also has a pearl oyster farm (others have been proposed) that has been in full commercial operation since 1998 and a crocodile farm that has the world’s largest number of captive saltwater crocodiles.

4. Aquaculture production in Fiji is still small, at less than ten percent of the value of all fishery exports. However, with a range of additional projects and the government’s research focus on diversification into additional species, aquaculture production is expected to increase dramatically. Best prospects in the short to medium term reside in freshwater aquaculture (tilapia and *Macrobrachium* prawns) owing to availability of fry, pellet foods, relative clarity of legal and land tenure issues, proven farming methods and a strong domestic market.

5. The Vanuatu government is currently placing substantial emphasis (e.g. through special training for two staff) on freshwater water species, such as GIFT tilapia (*Genetically Improved Farmed Tilapia*) and *Macrobrachium* prawn species for food security and small-scale business opportunity for locals. Freshwater prawn aquaculture has been targeted for


Appendix A: Terms of Reference
development, aimed at inland communities which do not have access to marine resources. Freshwater prawn farming is attracting interest for its potential to be integrated with rural agricultural practices, particularly in taro swamps. River-caught juvenile prawn species (*Macrobrachium lar*) are being stocked into taro irrigation systems on one island. Cultured coral has also been a minor aspect of aquaculture in Vanuatu. Records from the Department of Fisheries show that 6,737 pieces of cultured coral valued at 1,155,420 vatu (US$ 8,700) were exported from Vanuatu in 2001.

6. Aquaculture in the Solomon Islands is still at a developmental stage. The Coastal Aquaculture Center, established under a joint venture initiative with The WorldFish Center, promoted and established the culturing of juvenile giant clams by small-scale farmers, for export in the aquarium trade, where returns have been sufficient to prolong interest. A privately operated shrimp farm was established in the mid 1980s but ceased operations in 2000 and transferred to Vanuatu. Worldfish Center and its neighbour, USP’s Institute of Marine Resources, have similarly re-located to New Caledonia and Fiji respectively. A number of other trials with various freshwater and marine species over the years have been unsuccessful in initiating industry growth or stimulating major investment interest in the aquaculture sector. However, research into the viability of culturing black-lipped pearl oyster, sea cucumbers (beche-de-mer), a range of marine aquarium species, and a project to investigate green snail and trochus resources, have been initiated by the Coastal Aquaculture Center at an experimental farm near Gizo. Other research initiatives include the investigation of the Giant Clam sashimi markets in Asia, and *Kappaphycus* seaweed production which is now at pilot commercial scale.

7. Shrimp is the main aquaculture product in New Caledonia. Three quarters of the total annual production of 1,800 tonnes is for export, with a medium term goal of increasing production of shrimp for export to 5,000 tonnes. This industry has expanded in recent years to become a top ranking prawn producer among the European countries. The main species of cultured shrimp, *Penaeus stylirostris*, has shown considerable success as an aquaculture product. There are about a dozen large farms, located mainly in the terrestrial environment landward of mangrove areas along the western coast of New Caledonia.

There is a notable absence of specific aquaculture policies both at the regional and national levels. SPC has for the last decade been assisting Pacific ACP Member States in developing their aquaculture potentials through providing technical advice and training. Commonly, plans for aquaculture are often incorporated into general fisheries plans/policies and had mainly an economic objective, such as increasing employment and economic returns and food security. In recent years, countries in the region such as Cook Islands, Fiji, Papua New Guinea, Tonga and others have developed policies and legislation to promote aquaculture development. National aquaculture policies and legal frameworks are needed in order to address and direct issues not only concerning industry development, but also dealing with subsistence and community-based aquaculture development, environmental integrity and food security.

The policy and legislative environment can either stimulate or constrain aquaculture development. It is therefore important that PICTs enact suitable legislation that will promote sustainable aquaculture development.

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**Appendix A: Terms of Reference**
This ACP FISH II Aquaculture project is timely given that several countries beyond the Pacific region, in particular Australia and Canada, have also conducted legislative and regulatory reviews into the issues that will cause hindrances to and concerns for aquaculture development (Evans. N., Raj. J, and Williams. D., 2003\(^6\)). The findings of these reviews have helped to inform a study of the Pacific Islands as detailed in a report by Adams, T., Bell, J. and Labrosse, P. (2001) which also includes a description of the future activities that should be included in designing country-specific legislation and regional policy approaches. The report on a SPC funded project (Evans. N., Raj. J, and Williams. D., 2003\(^6\)) on a Review of aquaculture policy and legislation in the Pacific also provides details on Aquaculture specific policies and legislations status within the countries in the region.

**Related programmes and other donor activities**

Related programmes and other donor activities which contribute to similar or related ACP Fish II programme activities and this project include work or activities by the Japanese Trust Fund (OFCF), Australian Centre for International Agriculture Research (ACIAR), and the Secretariat of the Pacific Community (SPC). Funding has also been provided by Foreign Governments such as those of Thailand, Korea, Japan, China and Australia amongst others on a regional and bilateral basis with a view to developing aquaculture to address the food security issues faced by the Pacific Island States. OFCF funding has gone into developing infrastructure in fisheries training institutions to better train students in aquaculture (e.g.; National Fisheries College, PNG) while ACIAR funding has gone mainly into developing sustainable fisheries and aquaculture for food security in the region.

Funds made available by the Global Environmental Fund (GEF) are being used by the Regional Fisheries Bodies and Island states along with other funding providers such as the Coral Triangle Initiative (CTI) and Non-Government Organisations (NGOs), including Conservation International (CI), the World Wildlife Fund (WWF) and the Nature Conservancy (TNC), which have similar objectives to the ACP Fish II programme, to address aquaculture issues in the region. These organizations as well as SPC, through its Aquaculture Section, should be consulted in the carrying out of this study.

In the conduct of this assignment, consultants are expected to work closely with SPC, FFA, all countries fisheries administrations/agencies, the countries aquaculture fisheries associated stakeholders as well as relevant donors, donor funded programmes and NGOs to gather relevant information and ensure proper coordination of activities.

**2. OBJECTIVE, PURPOSE AND EXPECTED RESULTS**

**2.1 Overall objective**

The overall objective of the ACP Fish II Programme is to contribute to the sustainable and equitable management of fisheries in ACP regions, thus leading to poverty alleviation and improving food security in ACP States.

**2.2 Purpose**

The purpose of this contract is to assess the adequacy of aquaculture policy frameworks of Pacific ACP states with a view to developing an enabling environment for the sustainable development of aquaculture in the Pacific region.

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Study on Aquaculture Policy Frameworks in the Pacific Region

2.3 **Results to be achieved by the Consultant**

The Consultant will achieve the following results as part of this assignment:

- Regional and national policy frameworks governing aquaculture in the ACP Pacific states reviewed and assessed;
- Guidelines for developing aquaculture policies frameworks developed and validated;
- Training module on aquaculture policy guidelines developed;
- Training using approved module on aquaculture policy guidelines delivered;
- Awareness among PICT policymakers about the policy elements that need to be incorporated into national aquaculture policies increased.

3. **ASSUMPTIONS AND RISKS**

3.1 **Assumptions underlying project intervention**

The need for this intervention was clearly identified firstly in the Regional Needs Assessment workshop with the fisheries administrations and representatives of Regional Fisheries Bodies held in Honiara, Solomon Islands in November 2009. The relevance of this activity was confirmed by consultations with different Pacific ACP States’ national fisheries administrations/agencies and at the Pacific Regional Action Plan Validation Workshop held from 10th to 11th of November 2010 in Lautoka, Fiji, and at the recent ACP Regional workshop in Apia, Samoa, in April 2011. Discussions with fisheries stakeholders in Vanuatu and Tonga on missions in August and September 2011 also further confirmed this. The recent Regional monitoring workshop in Suva, Fiji in January 2012 again confirmed the need for this project.

Since ACP FISH II is a demand-driven Programme, it is assumed that counterpart institutions including fisheries administration/agencies within each of the Pacific ACP States will take all the necessary measures to ensure their fulfilment of obligations and responsibilities as set forth under this project. Failure to meet that requirement is likely to result in the project not achieving the desired results.

3.2 **Risk**

Risks for the implementation of this contract are minimised, since the intervention was identified and endorsed by all Pacific ACP member countries at the three different ACP FISH II Regional Workshops and country consultations. The assumption is that all Pacific ACP member states governments and other fisheries associated stakeholders are well aware of the intervention and are prepared to allocate official hours to its implementation. Possible additional risks include there being limited data available to assist in the drafting of aquaculture fisheries policy framework templates for the countries and region. The participatory planning approach adopted in the development of this intervention will continue through implementation to ensure that risks of overlap and lack of co-ordination with other initiatives of governments, RFBs, Donors and NGOs will be minimised.
4. SCOPE OF THE WORK

4.1 General

4.1.1 Project description

The project will cover all Pacific ACP states, namely; Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and Timor-Leste.

The project is expected to be implemented in one single phase where the experts will review and analyse all available information on existing international, regional and national aquaculture policy frameworks and any other relevant information within the region, including the report by the SPC on aquaculture policy and legal frameworks in the Pacific region (Evans. N., Raj. J, and Williams. D., 2003). This will be done through a desktop study and also by consultations through emails and telephone calls to the Pacific ACP states. To complete information, selected Pacific ACP states will be visited. Priority will be given to countries where aquaculture is a significant activity, particularly Fiji, PNG, Cook Islands and Solomon Islands. While in the Solomon Islands, the consultants will consult with the FFA Legal Section to discuss legal issues pertaining to aquaculture. SPC, which is actively involved in supporting and advising ACP Pacific states on aquaculture policy work, will be closely associated with this work. To facilitate close cooperation with SPC and regular consultation with the SPC aquaculture section officers responsible for policy instruments formulation, the experts will be hosted by SPC in its Nouméa office, New Caledonia.

After collection and compilation of relevant information, the consultant is expected to draft guidelines advising on how to develop aquaculture policy frameworks, using a step-by-step approach, and identifying and discussing critical issues that need to be addressed, including emerging issues faced by Pacific Island states. The guidelines should reflect relevant international and regional principles and best practices and address national needs. The target recipients of the guidelines are aquaculture administrations/agencies and potential investors and aquaculturists. This is to be done in close consultation with the Pacific Islands administrations responsible for aquaculture. Simultaneously, the experts will, in consultation with SPC, develop a Training Module based on the Guidelines to support the devising of national aquaculture policy instruments.

Once the training module has been approved, a 4-day Validation and Training Workshop will be convened in Fiji to validate the Guidelines and deliver the training. Twenty participants (aquaculture and policy) will be invited to attend this aquaculture training workshop (1 per country and 5 other participants to be selected in consultation with the ACP Fish II RFU).

4.1.2 Geographic area to be covered

The geographical coverage of this project extends to all ACP Pacific States’ territories and EEZs.

4.1.3 Target groups

The target groups for this project are aquaculture administrations/agencies, potential investors, and aquaculturists involved in the development of national aquaculture fisheries policy instruments.
4.2 Specific activities

4.2.1 Specific activities

The consultant will undertake the following activities:

1. Briefing with the ACP Fish II Programme (RFU for the Pacific) and SPC in Nouméa, New Caledonia;
2. With support of the SPC Aquaculture section, the consultant will identify and collect regional and national aquaculture policy instruments (e.g. aquaculture policies, strategies and management plans) for each Pacific ACP State;
3. Consult with the Government agencies involved in aquaculture policies development, the aquaculture industry and other aquaculture stakeholders in each ACP Pacific State through the internet, telephones and faxes;
4. Make country visits to selected countries of Fiji, PNG, Solomon Islands and Cook Islands to identify and collect national aquaculture policy framework information and determine and discuss issues the aquaculture sector is confronted with;
5. Review, assess and analyse the instruments and information gathered under items 2, 3 and 4 so as to identify the gaps in the existing policy frameworks and priority areas that need to be addressed in the guidelines and training module on developing national aquaculture policies;
6. Prepare, in consultation with FFA (Legal section) and SPC (Aquaculture section), draft Guidelines to support the devising of national aquaculture policy frameworks;
7. Prepare a training module based on the draft guidelines in item 6 to devise aquaculture policy frameworks in the Pacific region;
8. Organize, in consultation with the RFU and SPC, a regional Validation and Training workshop to be held in Fiji to train selected aquaculture and policy officers in drafting Aquaculture National Policy documents. Discuss and validate the draft guidelines to support the devising of such Aquaculture national policy documents (4-day workshop with 20 participants – one representative per Pacific ACP country and 5 other participants);
   The Consultant is responsible for the workshop’s organization and logistics (subcontracting for workshop organization is allowed).
9. At end of the workshop, finalise the Guidelines for developing National Aquaculture Policy frameworks.

4.2.2 Communication and project visibility

a) ACP FISH II projects should follow the EU requirements and guidelines for communication and visibility available on the Programme website at http://acpfish2-eu.org/index.php?page=templates&hl=en. The CU will provide ACP FISH II templates for various communication products.

b) When validation workshops are needed, given their importance for disseminating the results of the Project and ACP FISH II Programme the following activities will be requested:
   1) The Consultant will provide all necessary information in press-release style (“information note”) on the project objectives and results, the activities to undertake, the main axes or strategic goals proposed and the future role of the beneficiaries.
Study on Aquaculture Policy Frameworks in the Pacific Region

2) The Fisheries Administrations/Regional Fisheries Bodies will receive the information note at least 3 days before the workshop, through their Government communication/press bodies or officials, in order to mobilise local media and to assure full coverage of the event. Financial support to media coverage is included in the “Incidental Expenditure”. Receipt(s) of the incurred cost for media coverage will be required to verify the costs incurred.

c) The consultant will provide photographic record of the workshop activities.

4.3 Project management

4.3.1 Responsible body

The Coordination Unit (CU) of the ACP Fish II Programme, based in Brussels, on behalf of the ACP Secretariat is responsible for managing the implementation of this project.

4.3.2 Management structure

The ACP Fish II Programme is implemented through the CU in Brussels and six Regional Facilitation Units (RFUs) across the ACP States. The RFU in Honiara, Solomon Islands covering ACP Member States in the Pacific will closely supervise the implementation of this intervention and equally monitor its execution pursuant to these Terms of Reference. For the purposes of this assignment, the ACP Fish II Programme Coordinator will act as the Project Manager.

All contractual communications including requests for contract modifications or changes to the Terms of Reference during the execution period of the contract must be addressed with a formal request to the CU and copied to the RFU. Beneficiaries’ support for these changes is required.

4.3.3 Facilities to be provided by the Contracting Authority and/or other parties

Not applicable

5. LOGISTICS AND TIMING

5.1 Location

The place of posting will be at SPC, Nouméa, New Caledonia. The activities will be carried out in Cook Islands, PNG, Solomon Islands and Fiji in accordance with the approved timetable and work plan presented by the Consultant.

5.2 Commencement date and period of implementation

The intended commencement date of this assignment is 27/05/2013 and the period of implementation of the contract will be 5 months from this date. Please refer to Articles 4 and 5 of the Special Conditions for the actual commencement date and period of implementation.
6. REQUIREMENTS

6.1 Personnel

6.1.1 Key experts

All experts who have a crucial role in implementing this assignment are referred to as key experts. Their profiles are described as follows:

**Key expert 1: Aquaculture Specialist and Team Leader**

*Qualifications and skills*
- A postgraduate university degree or equivalent in aquaculture, fisheries management, fisheries science or a directly related field; a degree or a specialization in aquaculture will be considered an advantage;
- The expert should have a high level of proficiency in spoken and written English;
- Proven team leading skills.

*General professional experience*
- Minimum 8 years of relevant experience in aquaculture;
- Proven report-writing, project management and facilitation skills.

*Specific professional experience*
- Experience in reviewing and analysing aquaculture policy framework and in drafting and implementing aquaculture policy instruments (minimum 3 assignments);
- Experience in developing training modules and running training workshops (minimum 2 assignments);
- Experience in tropical aquaculture is required and specific experience in the Pacific region is an advantage;
- Experience in carrying out consultancy assignments for the EU or other equivalent international development partners (minimum 3 assignments).

The indicative number of missions outside the normal place of posting requiring overnights is 5 for this expert.

There will be in-country field visits outside the normal place of posting not requiring overnights for this expert.

**Key expert 2: Aquaculture expert**

*Qualifications and skills*
- A university degree or equivalent in aquaculture, fisheries management, or a directly related field;
- The expert should have a high level of proficiency in spoken and written English.

*General professional experience*
- Minimum 5 years of experience in aquaculture;
- Proven report writing and facilitation skills.

*Specific professional experience*
- Experience in reviewing and analyzing aquaculture policy framework and drafting aquaculture policy instruments (minimum 2 assignments);
Experience in facilitating training workshop is an advantage;
Experience in tropical aquaculture is required and specific experience in the Pacific region is an advantage;
Experience in carrying out similar assignments for the EU or other international development partners (minimum 2 assignments).

The indicative number of missions outside the normal place of posting requiring overnights is 5 for this expert.
There will be in-country field visits outside the normal place of posting not requiring overnights for this expert.

### Indicative number of working days by expert and task

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicative Task</th>
<th>Key Expert 1 (Days)</th>
<th>Key Expert 2 (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phase 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Briefing by ACP Fish II and SPC</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.2</td>
<td>Identify and collect regional and national aquaculture policy documents and information</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>1.3</td>
<td>Consultation visits to selected countries and FFA.</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>1.4</td>
<td>Interim Report preparation</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1.5</td>
<td>Review, assess and analyze national aquaculture policy documents and information</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>1.5</td>
<td>Develop Guidelines for developing national aquaculture policy frameworks</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>1.6</td>
<td>Preparation of Aquaculture Policy Training Module for developing national policy frameworks</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>1.7</td>
<td>Preparation for Stakeholder Workshop</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1.8</td>
<td>Stakeholder Validation and Training Workshop</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>1.9</td>
<td>Final report preparation</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>33</td>
<td>28</td>
</tr>
</tbody>
</table>

The tasks listed above must be a summary of the activities and not the listing of activities mentioned in section 4.2.

### Additional information

a) Key Experts are expected to spend at least 80% of the total indicative number of working days in the country(ies) concerned e.g., 27 days
b) Note that civil servants and other staff of the public administration of the beneficiary country cannot be recruited as experts, unless prior written approval has been obtained from the European Commission.
c) The Consultant must complete a timesheet using the ACP Fish II template provided by the CU at the start of the implementation period. The Consultant is entitled to work a maximum of 6 days per week. Mobilisation and demobilisation days will not be considered as working days.

Appendix A: Terms of Reference
Appendix A: Terms of Reference

6.1.2 Other experts

No other experts will be recruited under this assignment.

6.1.3 Support staff and backstopping

Backstopping and support staff costs are considered to be included in the fee rates of the experts.

6.2 Office accommodation

Office accommodation of a reasonable standard and of approximately 10 square metres for each expert working on the assignment is to be provided by the SPC and RFU. The Consultant shall ensure that experts are adequately supported and equipped. In particular it shall ensure that there is sufficient administrative, secretarial and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support its activities under the assignment and to ensure that its employees are paid regularly and in a timely fashion.

If the Consultant is a consortium, the arrangements should allow for the maximum flexibility in project implementation. Arrangements offering each consortium member a fixed percentage of the work to be undertaken under the contract should be avoided.

6.4 Equipment

No equipment is to be purchased on behalf of the Contracting Authority or beneficiary country as part of this service contract or transferred to the Contracting Authority or beneficiary country at the end of the contract. Any equipment related to this contract which is to be acquired by the beneficiary country must be purchased by means of a separate supply tender procedure.

6.5 Incidental expenditure

The Provision for incidental expenditure covers the ancillary and exceptional eligible expenditure incurred under this contract. It cannot be used for costs which should be covered by the Consultant as part of its fee rates, as specified above. Its use is governed by the provisions in the General Conditions and the notes in Annex V of the contract. It covers:

a) KEY EXPERTS

- Travel costs and daily subsistence allowances (per diems) for missions for Key Experts, **outside the normal place of posting**, to be undertaken as part of this contract. If applicable, indicate if the provision includes costs for environmental measures, for example CO2 offsetting.
- Travel costs for field visits for the Key Experts (car or boat rental, fuel and domestic flights).

Any subsistence allowances to be paid for missions undertaken as part of this contract must not exceed the per diem rates published on the European Union (EU) website at: [http://ec.europa.eu/europeaid/work/procedures/implementation/per_diems/index_en.htm](http://ec.europa.eu/europeaid/work/procedures/implementation/per_diems/index_en.htm)

b) WORKSHOP/TRAINING/CONSULTATIONS ORGANISATION

- The cost of organisation of the National Consultations and Regional Validation Workshop including cost for venue, communication and media activities, transport (domestic travel or car or boat rental to/from);
- The payment of a lump sum to participants requiring an overnight stay to cover accommodation and meals. This lump sum payment will be up to EUR 200 and must not exceed the published EU per diem rate for the country;
- The payment of a lump sum, up to 30% of the published EU per diem rate for the country, to all participants not requiring an overnight stay, to cover the cost of transport and meals;
In the two cases above, an attendance list signed by each participant and a separate list stating that the lump sum was received (with an indication of the amount) shall be used to justify the expenditure.

c) TRANSLATION


d) OTHER

- The cost of producing communication items to be used during the validation and training workshop;
- The cost of producing up to one extra copy of the approved Final Technical Report (FTR), to be presented to the beneficiary countries upon their formal request.

The Provision for incidental expenditure for this contract is **EUR 72,543**. This amount must be included without modification in the Budget breakdown.

### 6.6 Expenditure verification

The Provision for expenditure verification relates to the fees of the auditor who has been charged with the expenditure verification of this contract in order to proceed with the payment of further pre-financing instalments if any and/or interim payments if any.

The Provision for expenditure verification for this contract is **EUR 1,600**. This amount must be included without modification in the Budget breakdown.

This provision cannot be decreased but can be increased during the execution of the contract.

### 7. REPORTS

#### 7.1 Reporting requirements

Please refer to Article 26 of the General Conditions. There must be a final report, a final invoice and the financial report accompanied by an expenditure verification report at the end of the period of implementation of the tasks. The approved Final Technical Report (FTR) must be annexed to the Final Report (FR). The final report must be submitted to the CU after receiving the approval of the Final Technical Report (FTR).

The Final Report (FR) shall consist of a narrative section and a financial section. The financial section must contain details of the time inputs of the experts, of the incidental expenditure and of the provision for expenditure verification.
Study on Aquaculture Policy Frameworks in the Pacific Region

To summarise, in addition to the documents, reports and output which could be specified under the duties and responsibilities of each key expert above the Consultant shall provide the following reports:

<table>
<thead>
<tr>
<th>Name of report</th>
<th>Content</th>
<th>Time of submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inception Report (IR)</td>
<td>Preliminary assessment and work plan. This report of a maximum of 10 pages in length will be submitted to the Fisheries Administrations, RFU and CU for comments.</td>
<td>No later than 10 days after the first Expert arriving in the place of posting for the first time. Comments, if any, on the IR must be provided by the fisheries administrations or SPC, RFU and CU within 5 days from receipt.</td>
</tr>
<tr>
<td>Draft Final Technical Report (DFTR)</td>
<td>Description of achievements, problems encountered, recommendations and technical proposals suggested by the consultant</td>
<td>No later than 7 days after the experts leave the country on conclusion of the assignment. Comments on the draft FTR, if any, must be provided by the RFU, CU, SPC and the Fisheries Administrations within 14 days.</td>
</tr>
<tr>
<td>Final Technical Report (FTR)</td>
<td>Description of achievements, problems encountered, recommendations and technical proposals suggested by the consultant, taking into account changes and comments from the RFU, CU, SPC and the fisheries administrations.</td>
<td>Within 10 days after receiving comments on the Draft Final Technical report (DFTR)</td>
</tr>
<tr>
<td>Final Report (FR)</td>
<td>Short description of achievements including problems encountered and recommendations and suggestions; together with the Final Technical Report and a final invoice and the financial report accompanied by the expenditure verification report.</td>
<td>After receiving the approval of the Final Technical Report (FTR). If no comments on the report are given within the time limit of 14 days, the draft FTR shall be deemed to have been approved.</td>
</tr>
</tbody>
</table>

7.2 Submission and approval of reports

One electronic copy of the reports referred to above must be submitted to the Project Manager identified in the contract. Two hard copies of the approved Final Technical Report (FTR) must be submitted to the Project Manager identified in the contract (CU), one hard copy to the RFU and one hard copy to the fisheries administrations. The original and a copy of the Final Report (FR) must be submitted to the CU together with its annexes and supporting documents. All Reports must be written in English. Note that the approved Final Technical Report (FTR) will be translated by the Consultant into Portuguese. The Project Manager is responsible for approving the reports. The cost of producing such material will be included in the fees.
8. MONITORING AND EVALUATION

8.1 Definition of indicators

The results to be achieved by the Consultant are included in Section 2.3 above. Progress to achieving these results will be measured through the following indicators:

1. Quality of consultants fielded and speed of mobilisation to New Caledonia will indicate a positive start to the assignment;
2. Number of consultations carried out with different countries and organisations in the region;
3. Documents reviewed and Training module prepared;
4. Reported involvement of stakeholders in drafting of Training module;
5. Level of attendance, participation, and issues discussed at the Validation and Training workshops;
6. Guidelines prepared and adhered to by the ACP Pacific countries;
7. Quality of the technical output;
8. Respect of project milestone time schedule and reports time delivery.

The Consultant may suggest additional monitoring tools for the contract duration.

8.2 Special requirements

Not applicable.
Appendix B: Itinerary, institutions and individuals consulted

### New Caledonia (2-9 (KE1 & KE2) & 20-21 June (KE2) 2013)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Name &amp; Position</th>
<th>Contact details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secretariat of the Pacific Community (SPC)</td>
<td>Robert Jimmy, Aquaculture Adviser (FAME) <a href="http://www.spc.int/aquaculture">www.spc.int/aquaculture</a></td>
<td>T: +687 26.20.00 F: +687 26.38.18 E: <a href="mailto:Robertj@spc.int">Robertj@spc.int</a></td>
</tr>
<tr>
<td></td>
<td>Lindsay Chapman</td>
<td>E: <a href="mailto:LindsayC@spc.int">LindsayC@spc.int</a></td>
</tr>
<tr>
<td></td>
<td>Johann Bell</td>
<td>E: <a href="mailto:johannb@spc.int">johannb@spc.int</a></td>
</tr>
<tr>
<td></td>
<td>Genevieve Delahaie, Project Assistant, Aquaculture Section (FAME)</td>
<td>T: +687 26 01 83 F: +687 26 38 18 E: <a href="mailto:GenevieveM@spc.int">GenevieveM@spc.int</a></td>
</tr>
</tbody>
</table>

### Cook Islands (9-15 June 2013, KE2)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Name &amp; Position</th>
<th>Contact details</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMR</td>
<td>Ben Ponia, Director Fisheries</td>
<td>E: <a href="mailto:b.ponia@mmr.gov.ack">b.ponia@mmr.gov.ack</a></td>
</tr>
<tr>
<td>MMR</td>
<td>Koroa (Kori) Raumea, Director of Inshore Fisheries and Aquaculture</td>
<td>E: <a href="mailto:k.raumea@mmr.gov.ck">k.raumea@mmr.gov.ck</a></td>
</tr>
<tr>
<td>MMR</td>
<td>Dorothy Solomona, Director ofPearling</td>
<td>E: <a href="mailto:D.Solomona@mmr.gov.ck">D.Solomona@mmr.gov.ck</a></td>
</tr>
<tr>
<td>MMR, Aitutaki</td>
<td>Station head</td>
<td>E: <a href="mailto:fisheries@aitutaki.net.ck">fisheries@aitutaki.net.ck</a></td>
</tr>
<tr>
<td>Ora Moana Ltd</td>
<td>Raymond Newnham</td>
<td>E: <a href="mailto:oramoana@oyster.net.ck">oramoana@oyster.net.ck</a></td>
</tr>
<tr>
<td>Cook Islands Pearl Authority</td>
<td>George Ellis, CEO</td>
<td>E: <a href="mailto:ceo@pearlauthority.co.ck">ceo@pearlauthority.co.ck</a></td>
</tr>
<tr>
<td>Cook Islands Pearl Authority</td>
<td>Tina Browne, Chair</td>
<td>E: <a href="mailto:tina@browneharvey.co.ck">tina@browneharvey.co.ck</a></td>
</tr>
<tr>
<td>Pearl farmer and owner of Pearls Direct retail shop</td>
<td>Temu Okatai</td>
<td></td>
</tr>
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</table>

### Fiji (16 – 21 June 2013, KE2)

<table>
<thead>
<tr>
<th>Organisation</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Fisheries</td>
<td>Suresh Chand, Director</td>
<td>E: <a href="mailto:suresh.ff@gmail.com">suresh.ff@gmail.com</a></td>
</tr>
<tr>
<td>Fisheries</td>
<td>Shalendra Singh, Head of Aquaculture</td>
<td>E: <a href="mailto:gonegalili@yahoo.com">gonegalili@yahoo.com</a> M: +679 8645103</td>
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</tr>
<tr>
<td>SPC, Suva</td>
<td>Tim Pickering</td>
<td>E: <a href="mailto:timp@spc.int">timp@spc.int</a></td>
</tr>
<tr>
<td>SPC, Suva</td>
<td>Avinash Singh</td>
<td>E: <a href="mailto:Avinashs@spc.int">Avinashs@spc.int</a> P: +679 3379217</td>
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</table>
## Study on Aquaculture Policy Frameworks in the Pacific Region

### Papua New Guinea (17 – 20 June 2013, KE1)

<table>
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<th>Organisation</th>
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</table>
| National Fisheries Authority (NFA) | Jacob Wani, Executive Manager, Aquaculture & Inland Fisheries Unit | T: +675 3090 410  
F: +675 3202061/9  
E: jwani@fisheries.gov.pg |
| | Gideon Pama, Aquaculture Manager, Aquaculture & Inland Fisheries Bureau | T: +675 309 0406  
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| Department of Agriculture & Livestock (DAL) | Regina Nukundj, Acting Chief Livestock Officer (Food Security Branch) | E: rnukunfj@yahoo.com.au |
| National Agricultural Quarantine & Inspection Authority (NAQIA) | David Thomson, General Manager (Operations), Port Moresby | T: +675 311 2100  
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E: dthompson@naqia.gov.pg |
| | Dr. Peter Waiin | E: pwaain@naquiua.gov.ph |
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E: pkokoa@naqia.gov.pg |
| Tilapia farmer in cages on Sirinumu Reservoir, Central Province | Jonah Bobiogi, | M: +675 71518325 / 76844998 |
| Trout Farm Ltd, Kundiawa, Simbu Province | Betty Higgins | T: +675 5451481  
F: +675 5451481  
M: +675 72823164  
E: bhiggins@digicelpacific.blackberry.com |
## Appendix B: Itinerary, institutions and individuals consulted

### Study on Aquaculture Policy Frameworks in the Pacific Region

#### Solomon Islands (10 – 16 June 2013, KE1)

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<tr>
<td>ACP FISH II RFU</td>
<td>Augustine Mobiha, RFU</td>
<td>E: <a href="mailto:augustine.mobiha@ffa.int">augustine.mobiha@ffa.int</a></td>
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<tr>
<td>Ministry of Fisheries &amp; Marine Resources</td>
<td>Chris Ramofafia, Permanent Secretary</td>
<td>E: <a href="mailto:CRamofafia@fisheries.gov.sb">CRamofafia@fisheries.gov.sb</a></td>
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<td></td>
<td>Alex Meloty, CFO Aquaculture Unit, Inshore Fisheries Management Division</td>
<td>E: <a href="mailto:ameloty@fisheries.gov.sb">ameloty@fisheries.gov.sb</a></td>
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<td>Ronnelle Panda, PFO Policy &amp; Planning Unit.</td>
<td>E: <a href="mailto:rpanda@fisheries.gov.sb">rpanda@fisheries.gov.sb</a></td>
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<td>Rosalie Masu, DD Inshore Fisheries Management Division</td>
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<tr>
<td>Forum Fisheries Agency</td>
<td>Pio Manoa, Legal Adviser</td>
<td>E: <a href="mailto:pio.manoa@ffa.int">pio.manoa@ffa.int</a></td>
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<tr>
<td>Mekem Strong Solomon Islands Fisheries (MSSIF) Programme</td>
<td>Simon Diffey, Institutional Adviser and Team Leader</td>
<td>M: +675 7731278 E: <a href="mailto:sd@fishtech.eu.com">sd@fishtech.eu.com</a></td>
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<tr>
<td>WorldFish Centre</td>
<td>Delvene Boso, Country Director</td>
<td>M: +677 7600 726 E: <a href="mailto:d.boso@cgiar.org">d.boso@cgiar.org</a></td>
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<tr>
<td>Sol Fish</td>
<td>Antonio Lee</td>
<td>T: +677 22446</td>
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<tr>
<td>Tuna Industry Association of the Solomon Islands</td>
<td>Antonio Lee, President</td>
<td>M: +677 749 6246 E: <a href="mailto:solfish@solomonfish.com">solfish@solomonfish.com</a></td>
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<tr>
<td>WWF Western Melanesia Programme</td>
<td>Shannon Seeto, Marine Programme Manager</td>
<td>T: +677 28023 M: +677 7522 450 E: <a href="mailto:ssseeto@wwfwm.org">sseeto@wwfwm.org</a></td>
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<tr>
<td>WWF US</td>
<td>Maurice Knight, CTI Programme</td>
<td>E: <a href="mailto:Maurice.Knight@wwfus.org">Maurice.Knight@wwfus.org</a></td>
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Study on Aquaculture Policy Frameworks in the Pacific Region

Appendix D: Interim Technical Report
Appendix E: List of reports and documents consulted


Appendix E: List of reports and documents consulted


**SPC (2010b).** Tonga aquaculture commodity development plan: 2010-2014. Ministry of Fisheries with the assistance of the Secretariat of the Pacific Community, Secretariat of the Pacific Community, Nouméa, New Caledonia.

**SPC (2011).** Opportunities for the development of the Pacific Islands’ mariculture sector: report to the Secretariat of the Pacific Community. Hambrey Consulting in association with Nautilus consultants, Secretariat of the Pacific Community, Nouméa, New Caledonia.


**SPC (2013).** Work in progress towards the development of a regional aquatic biosecurity framework for the Pacific Island Countries and Territorie (PICTS). In: Joint paper prepared by the Secretariat of the Pacific Community and the Food and Agriculture Organization of the United Nations. 8th SPC Heads of Fisheries Meeting, Nouméa, New Caledonia., 12 pp.

Appendix E: List of reports and documents consulted
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Appendix F: Photographs of project, key activities and events to illustrate field activities and achieved results

Figure 2: Break-out group at the Nadi Workshop (10-13 September 2013)

Photographs courtesy of Tim Huntington (tim@consult-Poseidon.com)
Study on Aquaculture Policy Frameworks in the Pacific Region

Figure 3: Nandi Workshop Participants, 10-13 September 2013

Appendix F: Photographs of project, key activities and events to illustrate field activities and achieved results
Appendix G: Guidelines for an Aquaculture Policy Planning Framework in the ACP Pacific Region
Appendix H: Questionnaire to ACP Fisheries Administrations in the Pacific Region
### Appendix I: ACP Pacific Country Aquaculture Policy and Strategy Documents

<table>
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Study on Aquaculture Policy Frameworks in the Pacific Region

Project ref. N°: PAC-1.2-B4 REL

Guideline Validation and Training Workshop Prospectus

Tanoa International Hotel
Nadi, Fiji

10 – 13 September 2013

Assignment conducted by

Appendix K: Workshop Report (10-13 September 2013)
A. BACKGROUND TO THIS WORK

There is a notable absence of specific aquaculture policies at both regional and national levels in the Pacific region. Much of aquaculture policy-making is embedded in wider fisheries sectoral planning and is often production-focused, rather than providing a platform for sustainable aquaculture development.

The purpose of this study is to assess the adequacy of aquaculture policy frameworks of Pacific ACP countries with a view to developing an enabling environment for the sustainable development of aquaculture in the Pacific region. This will be achieved through a new review of national and regional aquaculture policies in the ACP Pacific states, followed by the preparation of guidelines and training materials. The consultancy will culminate with a stakeholder validation and training workshop to both ensure that the guidelines are robust, as well as to build a basic capacity in aquaculture policy planning in the participants.

The study is being funded by the European Union via the ACP Fish II Programme. This work is being undertaken by PBLH International Consulting SPRL.

B. PURPOSE OF WORKSHOP

A main output of this work will be the guidelines for developing national aquaculture policies. A draft copy was made available to participants three weeks before the workshop commenced.

The workshop took place over a four day period (10 – 13 September 2013) in the Tanoa International Hotel in Nadi, Fiji. 14 country participants, including two staff from SPC’s aquaculture team attended the workshop for the entire four days (see participant list). In addition, the ACPO Fish II Regional Project Manager attended a number of key sessions. The workshop will facilitated by the PBLH consulting team (Tim Huntington and Colin Shelley). Pilar Maroto and Martika Fong from PBLH provided on-site administrative and logistical support.

The purpose of the workshop was two-fold:

1. **Validation of the aquaculture policy framework guidelines**: it will be important to test these guidelines to ensure that they are fully relevant, practical and easy to follow as a standalone output. We therefore envisage that the workshop will be based around going through all the concepts contained in the framework, with a dual purpose of (i) using this process to introduce and embed the (in many cases) rather novel concepts involved and (ii) refining them based on the feedback of the regional participants. Once finalised, the guidelines will be published by SPC.

2. **Develop the capacity of the participants to apply these guidelines to their own national requirements**. As part of the validation process, we will go through, explain and discuss each of the guidelines and their sub-elements. In addition, we will provide the participants with the opportunity to evaluate and relate the guidelines to their own national requirements in order that they are able to fully understand the guideline intent and applicability. This will be conducted through group breakout and plenary sessions. By the end of the workshop we intend that participants will have the confidence and ability to apply the guidelines once back home.

C. FINAL AGENDA

The final agenda as followed by the workshop is provided overleaf.
Day 1 (Tues, 10 September 2013): Introduction and Overview of Aquaculture Policy

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Day 2 (Weds, 11 September 2013): Aquaculture Policy Development Processes

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## Day 3 (Thurs, 12 September 2013): Aquaculture Policy Content

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## Study on Aquaculture Policy Frameworks in the Pacific Region

### Appendix K: Workshop Report (10-13 September 2013)

#### Day 4 (Fri, 13 September 2013): Aquaculture Policy Implementation

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D. PARTICIPANT LIST

The names and details of the fourteen participants are listed below.

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<th>Position / Department</th>
<th>Country</th>
<th>E-Mail Address</th>
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<tbody>
<tr>
<td>Jimmy ROBERTS</td>
<td>Aquaculture Advisor, SPC</td>
<td>New Caledonia</td>
<td><a href="mailto:robertj@spc.int">robertj@spc.int</a></td>
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<tr>
<td>Augustine MOBIHA</td>
<td>Regional Manager, ACP Fish II</td>
<td>Solomon Islands</td>
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</tbody>
</table>
E. Guest Lectures

On Thursday 12 September, Mr. William Eddison, Legal Adviser at FFA, kindly provided a 20 minute presentation and a subsequent 10 minute question and answer session on aquaculture law and its relation to aquaculture planning.

F. Workshop Proceedings

Notes prepared by the consultants, including a summary of the breakout exercises are included in the following section.

DAY 1 (TUESDAY, 10 SEPTEMBER 2013)

No exercises were conducted on Day 1. Following the end of the presentations the participants were asked for (i) their thoughts on the proceedings so far, as well as (ii) their views on the main challenges facing the aquaculture sector in the Pacific Region.

Thoughts

- Need definitions
- Would like to see more industry representation
- Diversity of countries and their needs regarding aquaculture policy development
- Need to include endorsement process (especially flow diagrams) i.e. political sign off of policy
- Need to integrate presentations into flow diagrams

Challenges

- Lack of hatchery capacity – farmers not getting the seed stock they require
- Lack of skills / human capacity
- Feed and feed formulation (including costs & competition for raw materials
- Inbreeding
- Need for genetic research on local populations of cultured species + control / organisation of hatcheries and breeding programmes.
- Lack of government + private bank priority for small scale development
- Lack of aquatic health professionals
- Balancing aquaculture development with environmental conservation
- Rising energy costs e.g. fuel
- Aquaculture has low priority relative to wild fisheries, particularly tuna fishing
- Complicated routes & processes for legislation – takes a long time
- Land tenure a big issue for many countries
- Unsustainable donor projects lacking appropriate exit strategies
DAY 2: WORKSHOP FEEDBACK AND RESULTS

Timing

- Champions for change might be an organisation

Consultation

- Specialist area requires assistance e.g., consultants / facilitators
- Well publicised public meetings, especially for small stakeholders

Consultation Exercise

A national aquaculture policy may have a number of specific policies. This exercise will look at the different consultation approaches to each.

- Group 1: Environmental policy
- Group 2: Food security policy
- Group 3: Pearl aquaculture development in PNG

Please develop a stakeholder consultation process, including the following:

1. Stakeholder identification and organisation
2. Communication tools and strategies
3. Consultation periods
4. Feedback mechanisms

Group 1: Environmental Policy

1. Stakeholders
   - CSOs (communities, provincial councils, etc.)
   - Dept. of Environment
   - Local conservation groups
   - Line Ministries (fisheries, forests, lands, agriculture, mining & tourism)
   - SPC, SPREP & FFA

2. Communication Tools and Strategies
   - Workshops (travel costs) / meetings
   - Media – intent, radio, TV
   - Use NGOs
   - Farmer Associations / Groups

3. Consultation Periods
   - Country specific, depending upon population
     - Nauru – 2 weeks
     - Fiji – 6-10 weeks

4. Feedback mechanisms
   - Questionnaire / evaluations
   - Meeting feedback results (village, provincial & national levels)
   - Radio talkback
   - Internet
Group 2: Pearl Aquaculture Development in PNG

1. Stakeholders

- Aquaculture associations
- Environment department
- Tourism department
- Marine and port department
- Labour department
- Training & research institutions
- NGOs (conservation / development)
- Private investors
- Financial institutions
- Local government representatives
- Local community representatives
- Exporters / buyers
- Suppliers

2. Communication tools / strategies

- Communication workshop at the beginning to identify the key stakeholder groups
- Communication tools to target specific audiences e.g., Government (website / emails) and associations / private sector (face to face)
- Consultation Period

<table>
<thead>
<tr>
<th>Consultation</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
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<tbody>
<tr>
<td>Comm.’ workshop</td>
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<tr>
<td>Government</td>
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<td>Associations</td>
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<tr>
<td>Feedback</td>
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</tr>
</tbody>
</table>

3. Feedback mechanisms

- Website
- Emails
- Face to face discussions
- Radio talkback

Information

- Farm inventories, export statistics
- FAO fisheries statistics not necessarily accurate. Also data collection system is not suitable for all Pacific aquaculture commodities e.g. pearls
- OIE asks a useful source of information on disease occurrences and commodity exports
- Best Management Practices (BMP): FAO currently working on BMP for key species
- SPC has little in the way of regional statistics for aquaculture
- SPC was involved on economic data collection on a pilot basis for 3 countries and species.
- Vanuatu looking at economic data collection for tilapia. But difficult to get private sector economic data
- Lot of market data collected, but not compiled
- Need to have fish import and export data to determine food security and import substitution needs and prospects
Coherence

- Whilst many international agreements are not obligatory, they may result in national strategy positions that need to be considered for alignment.
- Whilst some countries are not signatories to CITES, they may export to countries that are and this needs to be taken into consideration.

Issues analysis

- Consider zoning for large and small-scale aquaculture. Maybe encourage small-scale aquaculture parks.

Exercise

2 groups, each to examine one of the following:

1. Local vs. export markets: please design a process for evaluating the optimal balance between aquaculture production for (i) export (e.g., for foreign exchange) and (ii) domestic consumption (e.g., for food security).

2. Subsidies: what possible public sector assistance might be provided to an emerging aquaculture sector and what processes would you put in place to allow this support to be withdrawn and the process remain sustainable?

1. Local vs. food security exercise

Case study on Fiji

1. Priorities

<table>
<thead>
<tr>
<th>Species</th>
<th>Local market</th>
<th>Import substitution</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tilapia</td>
<td>***</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Freshwater prawns</td>
<td>*</td>
<td>***</td>
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<tr>
<td>Pearl</td>
<td>*</td>
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</tr>
<tr>
<td>Seaweed</td>
<td>*</td>
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<tr>
<td>Shrimp</td>
<td>**</td>
<td>***</td>
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<tr>
<td>Giant clams</td>
<td></td>
<td>Restocking</td>
<td></td>
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<tr>
<td>Sea cucumber</td>
<td></td>
<td>Restocking</td>
<td></td>
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<tr>
<td>Trochus</td>
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<td>Restocking</td>
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<tr>
<td>Coral</td>
<td></td>
<td>Restocking</td>
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</tbody>
</table>

*** = high priority  ** = medium priority  * = low priority

2. Principles

- Information gathering on production, consumption, imports, exports and market
- Protecting genetic diversity of aquatic genetic resources
- Zoning
  - Inland rivers, lakes, lagoons (tilapia)
  - Urban centres (commercial)
  - Rural (subsistence)
- Property rights
  - Allocation by species against (i) local consumption, (ii) import substitution and (iii) export. Conducted fictional analysis for Fiji. For locally consumed species, can have policy that excess production can be exported.
Subsidies

Other key issues:
  - Biosecurity
  - Land tenure
  - Intellectual property rights
  - Conflicting donor priorities and agendas
  - Climate change (or a risk?)

2. Subsidies exercise

1. Subsidies
   - Public / private partnerships
   - Duty exemption – equipment & supplies
   - Low interest loan
   - Seed & feed subsidies e.g. reduced price
   - Transportation subsidies: fuel / diesel / vehicles
   - Technical support: R&D, Scholarships
   - Subsidised sea leases
   - Start-up capital / grants
   - Import risk assessments
   - Revolving funds
   - Tax relief

2. How to manage subsidies
   - Monitor the viability of operations receiving subsidies
   - Loans for certain times of loan
   - Phase out system for subsidy
   - Review subsidies against goals, milestones and time frames
   - Exit strategy for subsidies
   - Constant and clear communication of subsidies and their management

Subsidies linked to licence conditions and responsibilities e.g. carrot & stick approach

Risk assessment – pond exercise

Exercise

- What are the factors affecting the probability of fish escaping from ponds into natural waterways?
- What are the consequences of escaped fish?
- What can you do to manage the risk?

Factors

- Location – site selection
- Mesh sizes of drains
- Pond design
- Materials
- Stock level, density of fish
- Natural disasters
- Pond management & maintenance
- Water management
- Skills
- Predator control

Appendix K: Workshop Report (10-13 September 2013)
• Watershed management
• Climate
• Security

<table>
<thead>
<tr>
<th>Local Fish</th>
<th>Exotic Fish</th>
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<tbody>
<tr>
<td>Disease spread</td>
<td>Disease spread</td>
</tr>
<tr>
<td>Competition for food &amp; space</td>
<td>Competition for food &amp; space</td>
</tr>
<tr>
<td>Economic loss</td>
<td>Predation</td>
</tr>
<tr>
<td>Credibility of industry re ESD</td>
<td>Loss of genetic fitness</td>
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<tr>
<td>Impact on capture fishery</td>
<td>Economic loss for farmer</td>
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<tr>
<td>Loss of food</td>
<td>Credibility of industry re ESD</td>
</tr>
<tr>
<td>Loss of broodstock</td>
<td>Impact on capture fishery &amp; livelihood</td>
</tr>
<tr>
<td>Impact on local ecosystem</td>
<td>Introduction of ‘hitch hikers’ (pests)</td>
</tr>
<tr>
<td>Genetic impact</td>
<td>Impact on local spp.</td>
</tr>
<tr>
<td>Disease</td>
<td>Impact on ecosystem</td>
</tr>
<tr>
<td>Impact on recreational fishing</td>
<td>Genetic impact (?)</td>
</tr>
<tr>
<td></td>
<td>Disease – animal &amp; humans (?)</td>
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<tr>
<td></td>
<td>Loss of economic credibility</td>
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<tr>
<td></td>
<td>Impact on recreational fishing</td>
</tr>
</tbody>
</table>

Manage Risk

• Proper site selection – guidelines, minimum specifications, best practice, low risk flood areas
• Disasters – early warning system, contingency plans, evacuation plans
• Skills – proper training, monitoring & evaluation, training needs analysis
• Predator control – biosecurity, fencing
• Stock management – monosex culture
• Watershed ranking & evaluation
• Double screen
• Net to stop birds removing fish
• Maintain discharge pipes
• Improve pond design
• Disease monitoring & screening
• Inoculation of stock
• Good pond management
• Settlement ponds
• Buffer zones
• Risk assessment
• Quarantine
• Insurance against economic loss
Wrap-up – Day 2

Consultation
- Consultation is complex – needs to be done with careful thought and diplomacy
- Need to use existing stakeholder groupings where possible
- Need to reduce bias

Information
- Generally lack of accurate production statistics, although varies from country to country
- OIE useful source of information on exports and disease incidence
- Lots of market data, but little is compiled
- Need to have good fish import and export data to make decision on food security-related policy

Coherence
- Whilst many international agreements are not obligatory, they may result in national strategy positions that need to be considered for alignment.
- Whilst some countries are not signatories to CITES, they may export to countries that are and this needs to be taken into consideration.

Issues
- Possible to balance exports / local consumption with careful consideration and planning
- Other key issues:
  - Biosecurity
  - Land tenure
  - Intellectual property rights
  - Conflicting donor priorities and agendas
  - Climate change (or a risk?)

Risk assessment
Votes on the most important risks to be managed:
1. Food safety 7 votes
2. Biosecurity 4 votes
3. Environment 3 votes
4. Financial viability 2 votes
5. Genetic & biodiversity 0 votes
6. Climate change 0 votes

Final thoughts of participants – main topics of interest from Day 2
- Priorities of risk
- Database and information important – interested in work on gathering data on aquaculture in other developing countries such as Bangladesh as mentioned in presentation
- Exchange of information about aquaculture development in other pacific islands x3
- Subsidies – importantly how to use and manage them
- Risks associated with importing new species
- Risk assessment interesting – as were incentives (subsidies)
- Consultation process and how important it is to be inclusive of all stakeholder groups
- Interested in subsidies and how they can be aligned to priorities
- Interested in risk assessment matrix
- Exploring risk factors
- The interactive exercises were useful and provided an opportunity to exchange information with other Pacific nations
• Consultation process and the need to do it properly very interesting. How to develop criteria for inclusion is interesting
• Subsidies and incentives and how to manage them
• Risk assessment and the process was fascinating – especially the matrix
DAY 3 (12 September 2013)

Goals and objectives (3.1)

- Need to have a good example
- Needs to be reflect the ideal situation by the end of the policy cycle
- Maybe encourage the use of the LFA approach to link goals, objectives and outcomes.

Exercise

2 groups:

- Group 1: Environmentally sustainable aquaculture policy in freshwater
- Group 2: Marine spatial planning policy for mariculture

For each group, please:

1. State a single goal for the policy
2. State a number of objectives for the policy (pls make them SMART e.g., Specific, Measurable, Attainable, Relevant and Time-bound.)

Group 1: Environmentally sustainable aquaculture policy in freshwater

Goal: To develop freshwater aquaculture for sustainable livelihoods through environmentally sound best practices

Objectives

- Use current technology (GIS) for identification of potential sites for fw aquaculture
- To have all potential sites for FW aquaculture identified within 3-5 years
- To raise the current farmer participation and production levels by 10% per year for next 10 years
- Establish bench marks for best practice for culture techniques
- Reduce poverty levels by creating alternative livelihoods and income generation
- Food security
- Establish an aquaculture council or working group to develop the benchmarks (relevant to stakeholders)
- Compliance to the benchmarks through monitoring by relevant authorities (biosecurity, environment, fisheries)

FAO guidelines modify

Group 2: Marine spatial planning policy for mariculture

Goal: Mariculture operates in harmony with other coastal users

Objective:

1. A minimum of 20% of coastal areas are allocated for mariculture activities by 2018.
2. A spatial plan for marine areas is developed for the whole country by 2016
3. Identification of at least four viable commodities for the selected coastal areas by 2020.
5. At least five mariculture farms are established by 2024
Policy timeframe and evaluation (3.2)

Background (3.3)

Identification of implementation pathways (3.4)

- Need to consider alternative strategic approaches
- Use impact assessment tools
- Strong role for an independent facilitator to provide skills and encourage wide thinking
- Strategic approaches can often look at regulatory vs. non-regulatory approaches, but other approaches should be considered.

Exercise:
For each of the previously developed objectives, produce two alternative strategic approaches to achieving them.
For each consider what regulatory and non-regulatory approaches might be used to implement these.

Group 1: Environmentally sustainable aquaculture policy in freshwater

Legislative and non-legislative approach

- Consultation and MOU with landowners
- Farm clusters, cooperatives to determine purpose of sites
- Commercial FDI (?)
- Develop GIS systems for identification of sites for freshwater aquaculture
- Ensure all relevant resources (financial, technical, human) are in place
- Develop a framework to mobilise resources
- Look at different options for extensive, semi-intensive and intensive groups

Group 2: Marine spatial planning policy for mariculture

Objective 1: A spatial plan for marine areas is developed for the whole country by 2016

- Strategy 1: A group of experts uses GIS to develop a marine spatial plan. This is then embedded in law.
- Strategy 2: A consultative exercise at local levels develops a zoning plan. Thus is then cemented in place with codes of practise and MoUs.

Objective 2: Identification of at least four viable commodities for the selected coastal areas by 2020.

- Strategy 1: Undertake a national workshop involving all relevant stakeholders to identify and prioritise the species. Then develop a ‘Commodity Development Plan’.
- Strategy 2: New Government selects commodities on the basis of national priorities without any consultation. Farming of these is then made a licensing condition.

Consultations undertaken (3.5)
Policy provisions (3.6)

- Maybe add (i) sector reporting and (ii) R&D (maybe into Enabling investment category)

Exercise:

Group 1: Macrobrachium spp. Policy
Group 2: Sea cucumber Policy

For each species policy, suggest what policy provision would be most important and explain why

Group 1: Macrobrachium spp. Policy

1. **Technical systems and processes**
   - Ensure best pond design and management
   - Hatchery design and management
   - Intensive vs. extensive systems
   - Brood stock management
   - Selective breeding programme
   - Feeding regimes

3. **Licensing and permitting / land allocation**
   - Permitting (of small scale businesses)
   - Licensing (of large scale businesses)
   - Zoning
   - Licence conditions / classes / species

4. **Biosecurity**
   - Source of broodstock / seed
   - Quarantine protocols
   - Disease management plans
   - Translocation guidelines
   - Notifiable diseases
   - Feeds sources

5. **Environmental management**
   - Water management
   - Environmental Impact Assessment
   - Use of chemicals, antibiotics, fungicides, etc.

8. **Food safety and quality**
   - Harvest and processing guidelines
   - Quality control (food-borne diseases)

Additional protocols needed: Data collection / reporting requirements & R&D
Group 2: Sea cucumber Policy

- Farmers (hatchery technicians): broodstock management, larval rearing techniques (vocational or tertiary education)
- Fishers / Collectors: scuba training (vocational), handling (extension – short-term course)
- Government officers: Policy development training
- Processors: Food safety, food technology and post-harvest technology (vocational)
- Exporters: awareness of guidelines and conditions (short-course, extension)
- Communities: Surveillance, compliance, species ID, size limits, regulations and market value (awareness + short courses)

Risk assessment (3.7)
Capacity development (3.8)

Exercise

<table>
<thead>
<tr>
<th>Group 1: Macrobrachium spp. Policy</th>
<th>Group 2: Sea Cucumber Policy</th>
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</thead>
<tbody>
<tr>
<td>For each group:</td>
<td></td>
</tr>
<tr>
<td>1. Consider what different stakeholders might require capacity development</td>
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<tr>
<td>2. For each of these, suggest the best capacity-building approach (e.g., formal vocational training; ‘on the job’ vocational training and apprenticeships; academic training in aquaculture development and business management; and / or R&amp;D).</td>
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</tr>
</tbody>
</table>

Group 1: Macrobrachium spp. Policy

1. Land owners: Awareness
2. Farmer (Owners & operators): Vocational, study tours, exchange visits
3. Technicians (pond & hatchery): vocational, academic & apprenticeships
4. Labourers: on the job training
5. Suppliers:
   - Feed: Academic & vocational
   - Equipment: awareness, vocational and academic
6. Buyers:
   - Retailers: awareness
   - Wholesalers: awareness
   - Consumers: awareness
   - Exporters: awareness
7. Processing: vocational & academic
8. R&D: academic, on the job & vocational
Compliance, monitoring and enforcement (3.9)

Day 3 Wrap-up comments

- Training brings draft guidelines to light. Exercises very useful.
- Liked the policy provisions especially
- Intensive day, looking at the main parts of the policy process
- Maybe more M&E in contents.
- Put in some worked examples from other countries
- Goal setting was quite a challenge – maybe develop these guidelines
- Bringing together people from different countries and backgrounds is very useful
- Need to have an up-front policy synthesis as most politicians won’t read a lengthy document.
### Strategies and development plans (4.1)

**Exercise**

Group 1: Tilapia Farming Development Plan  
Group 2: Seaweed Farming Development Plan

Please identify the main components of an industry development plan for the above species. How do these link to policy and strategy development?

#### 1. Tilapia Farming Development Plan

**Group 1**

**A. Components of a Tilapia Industry Development Plan**

1. R&D &E  
2. Infrastructure development  
3. Biosecurity  
4. Broodstock management  
5. Capacity building  
6. Environment  
7. Feeding  
8. Post-harvest  
9. Market and trade  
10. Quality control  
11. Zoning  
12. Permits & licences  
13. Data collection  
14. Selective breeding  
15. Land tenure  
16. Funding mechanisms  
17. Seed supply  
18. Farming operations  
19. Human resources  
20. Monitoring & evaluation

**B. Development Plan Structure**

Objectives  
Outcomes  
Targets  
Activities  
Timeframe  
Budget  
Implementation agency  
M&E

**Group 2:**
Components of a Seaweed Industry Development Plan

1. Zoning
2. Farmers (training, economic modelling)
3. Species investigation
4. Farming systems
5. Processing¹
6. Market²
7. Environmental issues
8. Transport & logistics
9. Financial arrangements

Processing¹
- Identified number of processing centres
- Best processing technique
- Food safety issues
- Training

Outcome: Best processing techniques

Action: Undertake a desktop study to investigate best processing techniques and feasibility of processing seaweed

Timeframe: 2 weeks / Organise funding: 1 month / Human resources required 0.1 FTE / responsibility USP / mini-review of progress 6 weeks / communicate feedback to steering group

Market component of industry development plan²

1. Strategy
2. Actions & Activities
3. Timelines, Funding, HR, Responsibility
4. Review & monitor

Enabling actions (4.2)
- No major comments

Monitoring & evaluation (4.3)

Exercise

A PNG tilapia development plan has the following objective:

“To achieve environmentally sustainable tilapia farming that contributes to small-holder livelihoods and local food security in the highlands of PNG”

For the above, please propose a set of at least four indictors that can be used to monitor whether the above objective is being achieved. For each, demonstrate that they are SMART e.g., Specific, Measurable, Attainable, Relevant and Time-bound.
Group 1:

1. **Environmentally sustainable**
   - Levels of tilapia populations in the wild for a baseline. Use market surveys to monitor

2. **Small-holder**
   - Number of farmers and water area under cultivation. Monitor via a permitting system

3. **Livelihoods**
   - Percentage contribution to income from tilapia versus other income-generation activities

4. **Food Security**
   - Parentage contribution of tilapia to family protein intake
   - Volume of cultured tilapia available on the local market

Group 2

1. **Environmentally sustainable**
   - Monitor water quality upstream and downstream of tilapia farms measuring key water quality parameters on a quarterly basis
   - Undertake an annual fish survey of streams and rivers near tilapia farmers and record % tilapia v % native fish

2. **Small-holder livelihoods**
   - Collection of data from simple farmer logbooks
   - Monitor profit from tilapia farming v other agribusiness activities

3. **Food Security**
   - Levels of malnutrition / nutrition measured at local health clinics in the area for kids aged 2-5 from families with and without tilapia ponds

4. **Production**
   - Monitor number of subsistence farmers biannually through departmental surveys

**Funding & resourcing (4.4)**
- Donor agency funding cycles are often very short

**Implementation tools (4.5)**
- Fiji has included licensing and registration of farmers

**Human Capacity Building (4.6)**
- No major comments
Day 4 Wrap-up

1. All participants:
   - Interactions from the workshop sharing policies and issues
   - Need to train senior officers in policy awareness
   - Need to share results of workshop with countries who did not attend
   - Need to better utilise aquaculture development impact indicators
   - Risk analysis process was particularly useful
   - Would like to see SPC store information on policy development processes and host an interactive forum
   - FAO has a good website (National Aquaculture Legislation Overview) http://www.fao.org/fishery/collection/nalo/en
   - Useful to include a many links in the guidelines as possible
   - Need to use the guidelines as a valuable resource for the USP fisheries and aquaculture curriculum
   - Need to make sure policy is implemented – many such actions are not followed up.
   - Need for project management, facilitation and presentation skills development, especially in aquaculture technical officers who have an increasing managerial role.

Robert Jimmy (SPC Aquaculture Adviser)
   - SPC can support project management training, esp. if a visible demand is presented
   - Guidelines will be produced in hard copy as well
   - Thanks to the two facilitators.
   - 2-3 page executive summary.
F. WORKSHOP PRESENTATIONS

The workshop presentations are provided in the following pages.