SciCOFish

SCIENTIFIC SUPPORT FOR THE MANAGEMENT OF COASTAL AND OCEANIC FISHERIES IN THE PACIFIC ISLANDS REGIONS

Gender in Oceanic and Coastal Fisheries Science and Management

Based on case studies in Solomon Islands, Marshall Islands and Tonga

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A report for the SciCOFish Project

Patricia Tuara and Kelvin Passfield

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Photo 2: Emma Kabua, Endangered Species Officer, Marshall Islands (image: Marshall Islands Marine Resources Authority).
Photo 3: Cynthia Wickham, Tuna Tagger, Solomon Islands (image: SPC Oceanic Fisheries Programme).
Photo 4: Mele Makasini-Tauati, Fisheries Officer, Tonga Fisheries Division (image: M. Makasini-Tauati).

CONTENTS

LIST OF TABLES

ANNEX TABLES

LIST OF FIGURES

ANNEX FIGURES

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The full list of those who have assisted with this study is included in Annex 3.

Patricia Tuara and Kelvin Passfield

LIST OF ABBREVIATIONS

CMI	College of the Marshall Islands
EEZ	exclusive economic zone
FFA	Forum Fisheries Agency
FIAT	Fishing Industry Association of Tonga
FSM	Federated States of Micronesia
HACCP	hazard analysis and critical control points
HoF	Heads of Fisheries
IT	information technology
JICA	Japan International Cooperation Agency
MAFFF	Ministry of Agriculture & Food, Forests & Fisheries (Tonga)
MCS	monitoring, control and surveillance
MICS	Marshall Islands Conservation Society
MIMRA	Marshall Islands Marine Resources Authority
NGOs	non-governmental organisations
NZHC	New Zealand High Commission
RMI	Republic of the Marshall Islands
RMIEPA	Republic of the Marshall Islands Environmental Protection Authority
SciCOFish	Scientific support for the management of coastal and oceanic fisheries in the Pacific Islands region
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
UNDP	United Nations Development Programme
USP	University of the South Pacific
WCPFC	Western and Central Pacific Fisheries Commission
WWF	World Wildlife Fund for Nature

EXECUTIVE SUMMARY

The purpose of this study is to benchmark the current situation with regard to women's participation in the science and management of oceanic and coastal fisheries in the Pacific region, and make recommendations on how this might be made more equitable. The study was commissioned for the SciCOFish Project (Scientific support for management of coastal and oceanic fisheries in the Pacific Islands) funded by the tenth European Development Fund.

To gain an overview of the participation of women in fisheries science and management in the Pacific Islands, case studies were undertaken in three countries: Solomon Islands (Melanesia), Marshall Islands (Micronesia), and Tonga (Polynesia). In each country a gender analysis was completed for the fisheries science and management sector. The quantitative and qualitative information on the current situation, including identification of barriers to participation, is the basis for the recommendations for Secretariat of the Pacific Community (SPC) support.

As expected, the study showed that there are more men than women employed in the fisheries science and management sector. The case studies in Solomon Islands, Tonga and Marshall Islands show that women comprise 18% of the total number of staff working in this sector in government fisheries, environmental institutions and environmental non-governmental organisations (NGOs). If fishing vessel observers — work that is always likely to be heavily dominated by men — are removed from the calculation, women's participation increases to 25% of the total.

In contrast, the percentage of women employed in administrative and clerical roles in government fisheries exceeds 60%.

While each of the three countries studied is unique and has its own specific barriers affecting the participation of women in fisheries science and management, there were a number of commonalities, mostly based around societal perceptions that:

- the traditional role of women is that of home makers and caregivers, with the resultant extra obligations placed on woman who are also pursuing a career;
- fisheries in general and science and management in particular are technological fields best suited to men, whereas women who may pursue a career in science are more suited to employment in teaching, health or other fields generally dominated by women.

In order to overcome barriers, we need to change these perceptions.

There are three ways to increase women's participation in fisheries. The first is by raising the profile of fisheries as a potential career as well as the profile of women already working in the sector; the second is by providing a support network; and the third is by strengthening the institutional level (work environment and conditions).

A list of recommended interventions that could be undertaken to make a career in fisheries science and management more accessible to women and thereby improve the gender balance in the sector is given in this report. SPC's SciCOFish Project can play a role in assisting countries to implement many of these interventions. Some would require collaboration between SPC divisions and other national and regional institutions.

Women who have an aptitude and desire for a career in fisheries science and management need to know that this is in fact a perfectly reasonable option for them, and equal opportunities need to be made available for them to choose it.

1 INTRODUCTION

The SciCOFish Project is funded under the tenth European Development Fund (EDF 10) and commenced in July 2010. The **overall objective** of this project is the conservation and sustainable use of coastal and oceanic fisheries resources in the Pacific-ACP (African, Caribbean and Pacific Group of States) region, while the **project purpose** is to provide a reliable and improved scientific basis for management and decision making in oceanic and coastal fisheries. The **gender objective** of the project is to increase the benefits from the fishery sector for women by creating an environment of equal opportunity for the participation of men and women in different components of oceanic and coastal fisheries science and management.

The Gender in Oceanic and Coastal Fisheries Science and Management study reported on here was commissioned by the SciCOFish Project.

The scope of the study includes:

- conducting a literature review of gender roles in the fisheries sector in the Pacific region;
- collecting information from sector stakeholders currently working in fisheries science and management (public sector, private sector, NGOs, academic institutions);
- identifying and assessing factors that form barriers for women's participation in these sectors;
- identifying specific approaches to address barriers, and identifying specific interventions in each country;
- reporting back to stakeholders in each country;
- producing a report, and a gender mainstreaming toolkit.

The complete terms of reference can be found in Annex 1.

The consultancy team of Patricia Tuara Demmke and Kelvin Passfield was assisted by local consultant, Kristina Fidali-Hickie (Solomon Islands).

2 FISHERIES THROUGH A GENDER LENS

It is generally accepted that balanced, equitable and sustainable development of the fisheries sector must take all social groups into account. However, studies have shown that the role of women in the sector has, for a long time, gone unrecognised and their voice is rarely heard by managers, policy makers and legislators (Maetala 2009; Novacek, Fitzpatrick and Roach-Lewis 2009). The lack of recognition and representation is not only unfair, but it also leads to an incomplete understanding of how the sector as a whole operates and functions (MRC 2006).

Recent studies show that women are an integral and important part of the fisheries' workforce, and their dominance (in numbers) in the processing sector is well known.[1]

Formulating the measures necessary to redress gender imbalance requires knowledge about why issues relating to gender are neglected, and why the role and position of women in fisheries is an important issue.

[1] See Pacific Islands tuna and gender issue studies by Sullivan and Ram-Bidesi 2008, Tuara-Demmke 2006, Tuara and Nelson 2000, Vunisea 2006 and Wichman 2001.

Why are gender issues neglected?

Gender issues have been neglected for several reasons, including the following:

- a belief that fishing and fisheries are primarily the domain of men;
- the concept of fisheries as largely limited to direct fishing activities;
- the gender stereotype of women as being physically weak and therefore unsuited to the physical demands of fishing;
- the gender stereotype that women are not technically minded;
- the fact that there are disproportionately few women in fisheries departments and in academia.

Why are gender issues in fisheries important?

In addition to the obvious concerns about fairness, equal opportunity and discrimination, there are other reasons why effective and efficient development of Pacific Island oceanic and coastal fisheries must take the role of women in the sector into account. These are listed below.

1. Women make significant contributions to fishery-related activities other than fishing. They play a major role in processing fish and fishery products, as well as in marketing. While these roles may be different from those of men, they are integral parts of the industry, and ignoring these activities means ignoring a large portion of the sector.

2. The different work done by women generates different kinds of knowledge. Only with knowledge of both women's and men's opinions and expertise can we understand the fishery sector in its entirety, and manage its development appropriately.

3. The under-representation of women in decision making takes away a large portion of the available pool of expertise — from both the government and the community. Studies have shown that having more women in an organisation leads to better cooperation among team members and facilitates the decision-making process (Woolley, Chabris and Pent 2010). This might be because mixed teams of men and women are better than single-sex groups at solving problems and spotting external threats (The Economist 2006). Studies have also suggested that women are often better than men at building teams and communicating (ibid. 2006).

FISHERIES SCIENCE AND MANAGEMENT IN THE PACIFIC

In the context of this report, fisheries science refers to the academic discipline of understanding fisheries, and it draws on (but is not exclusive to) the disciplines of oceanography, marine biology, marine conservation, ecology and population dynamics. Fisheries management draws on fisheries science and other disciplines in order to find ways to protect fishery resources so that sustainable exploitation is possible. The line dividing fisheries science and fisheries management is blurred, especially in the Pacific, where the few qualified staff available are usually called on to work in both areas.

Therefore, it was necessary to incorporate numbers of participants in fisheries science and management into a single category for some aspects of the analysis, rather than trying to report on them as separate categories. These staffing positions include: fisheries research officers involved in surveys of inshore and offshore fishery resources; aquaculture research officers; fisheries economists; policy and legal officers; post harvest specialists; and marine conservationists. [2]

[2] A glossary of fisheries and gender terms used in this report is included in this report, and a more complete list of occupations in fisheries science and management is given in Annex 2.

The University of the South Pacific (USP), with its main campus in Suva, Fiji, offers both a Marine Science and a Marine Affairs degree. The USP website [3] indicates that their graduates obtain employment in a number of sectors, including:

- government fisheries agencies, including national fisheries departments (fisheries research, management, policy, marine surveillance and enforcement, extension);
- other government departments, including environment, education, foreign affairs, policy, justice, planning, shipping & trade, tourism, mineral resources, energy);
- fishing, aquaculture and fish processing industries;
- national and regional natural resources management agencies (such as SPC, the Forum Fisheries Agency [FFA], and the Secretariat of the Pacific Regional Environment Programme [SPREP]);
- conservation organisations and non-governmental organisations (NGOs). such as the World Wildlife Fund for Nature (WWF), the Foundation of the people of the South Pacific International, the Wildlife Conservation Society and the International Union for Conservation of Nature;
- research institutions;
- education (school and university);
- tourism industry;
- private sector (environmental consultants, industry scientists and managers);
- NGO lobbyists and regional organisations;
- coastal area managers and developers.

Annex 2 has a more detailed list of possible careers.

3 CASE STUDY METHODOLOGY

A literature and Internet search of gender mainstreaming methodologies, gender in fisheries and gender in fisheries science and management was carried out in preparation for the research. An additional search was carried out for the production of the resources listed in Annex 5 and the mainstreaming toolkit in Annex 6.

Fieldwork in Solomon Islands, Marshall Islands and Tonga was carried out in November 2010. Annex 3 is a comprehensive list of persons contacted during the study. The research methodology includes interviews (formal and informal) with representatives from government, non-government organisations, the private sector, academia, development agencies, and regional organisations.

To examine a possible bias caused by education opportunities, information on scholarships was collected from the relevant government departments, as well as information on school enrolment and curriculum from the education departments, and population data from the statistics departments.

Focus group sessions were held with a selection of male and female staff at the fisheries divisions, as well as a selection of final year male and female science high school students.

Prior to departure from each country, a feedback session was conducted at the fisheries department, in which people who had been interviewed and other interested parties were invited to participate. This provided some feedback in the form of initial results of the in-country studies to the stakeholders, and also facilitated a final review and revision of in-country findings by the consultants.

Following the in-country fieldwork, data were analysed for the preparation of this report. A summary of results is in the next section and more information is in Annex 4.

[3] See USP website http://www.usp.ac.fj/index.php?id=4228#c5675

4 FINDINGS — COUNTRY DATA

4.1 Gender balance in fisheries science and management

The gender balance of personnel working in fisheries science and management in the Pacific region is heavily weighted towards men. The average percentage of female staff working in the sector in the three case study countries, including observers on fishing vessels, is 18% (Figure 1).

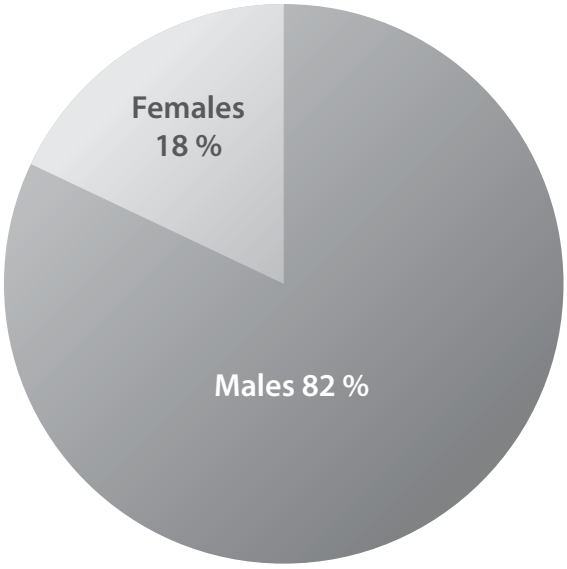


Figure 1. Percentage of males and females in fisheries science and management, including observers

If observers are removed from the calculation, the average increases to 25% (Figure 2).

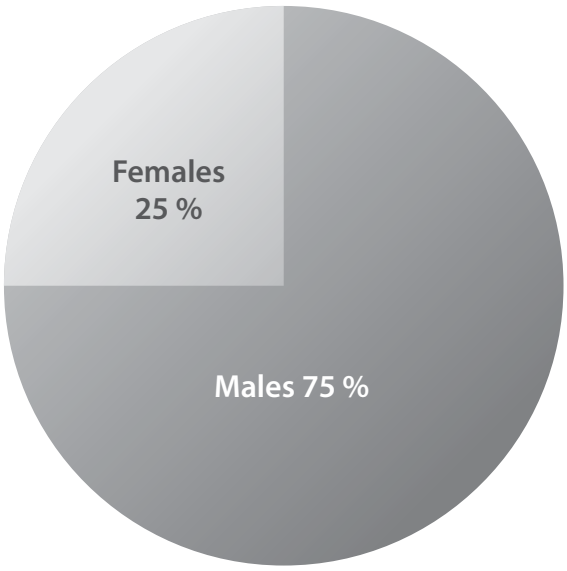


Figure 2. Percentage of males and females in fisheries science and management, excluding observers

COUNTRY DATA

The findings above are based on the information collected in each of the three countries, which is summarised in this section. Annex 4 contains more detailed country-specific data relating to employment numbers, education and scholarship figures, as well as information on barriers to participation.

Solomon Islands

- There are fewer girls than boys enrolled in schools, starting with 47% in year 1 (age six), and decreasing to 32% by the end of high school. There is also a relatively low number of girls in form 6 science classes. According to data from 2001 to 2011, young women received only 30% of the scholarships awarded for tertiary education.
- In the government fisheries agency, women comprise 14% of all staff, and make up 11% and 12% of the staff working in fisheries science and fisheries management respectively. Fisheries science in particular has only two women staff, both with a Bachelor of Arts in Marine Affairs (a marine management degree). There are no women in the Ministry of Fisheries and Marine Resources who hold a science degree at the present time. There are also no women in senior management positions.
- Representation of women is more favourable in the government's environment agency. Of the five staff working at the professional level on the marine conservation aspects of the Coral Triangle initiative, three, or 60%, are women with science degrees.
- In four NGOs based in Solomon Islands, the percentage of women employees working in fisheries science and management averages 44%.
- Solomon Islands women are starting to enter non-traditional areas of work, such as observers and tuna taggers on board fishing vessels.
- Private sector tuna processing in Solomon Islands mostly employs women as unskilled labour. There is just one local woman with a degree working as a trainee, currently in trans-shipment, for a local private sector fishing company. There are seven Solomon Islanders with degrees working for the tuna cannery, one woman and six men.

Marshall Islands

- Although dropout rates for girls are higher than for boys at primary and secondary levels, girls do better at the tertiary level.[4] From 2000 to 2005, women outnumbered men in the awarding of scholarships. More women than men pursue postgraduate studies.
- Women comprise 13% of the staff working for the Marshall Islands Marine Resources Authority, MIMRA. This figure includes two women out of the six members of the Board of Directors. Of staff carrying out scientific work, 20% are women and of staff carrying out management work, 35% are women.
- In MIMRA there are two women in positions of responsibility at the senior middle management level — one is the Chief of Oceanic and Industrial Affairs, and the other is the Chief of Inshore Coastal and Community Services. With the support of the Executive and Deputy Directors, the two chiefs are in charge of a mostly male staff for all coastal and oceanic work.

[4] Chutaro and Heine 2003 explore the underlying issues affecting education in the Marshall Islands.

- Gender numbers are more favourable in semi-government where the Republic of the Marshall Islands Environmental Protection Authority (RMIEPA) is headed by a woman, and two of the five board members are women. However, only 20% of the staff working in fisheries science and management are women.

- The environmental NGO, the Marshall Islands Conservation Society, has one woman among the seven technical staff (16%), but has three women sitting on the five-member Board of Directors.

- The private sector employs a majority of women, but mainly for unskilled labour. In one tuna processing plant, women comprise 65% of total staff. The majority of the women are low paid workers who process the fish. There are some Marshallese men and women in management positions and conducting scientific work (laboratory analysis) and quality control but most of the staff in these positions are recruited from overseas, as few Marshallese have skills in these areas.

- In terms of academic qualifications — in MIMRA, of the women graduates four have a Bachelor of Marine Science and one a Bachelor of Marine Biology. Two of the five women are currently pursuing an MSc (one in cell research and one in marine biology) and two others are studying statistics at the USP-RMI campus. In the environmental field, the Manager of the RMI Environment Protection Authority, a woman, has a Bachelor of Management Studies in environment and management.

Tonga

- In high schools, girls and boys are approximately equal in terms of overall student numbers. However, in senior science subjects such as biology, physics and chemistry, there are significantly more girls.

- Despite the dominance of young women in science, scholarship data since 2003 show that 41% of science scholarships have gone to young women, although they have received 55% of all scholarships. The largest proportion (39%) of young women pursuing science chose scholarships for medicine, dentistry and computing.

- Women comprise 30% of the staff working for the Tonga fisheries division. In areas of work, women comprise 8% of staff in science and 35% of staff in fisheries management. There are no women in senior management positions, although there are women (with no tertiary qualifications) in charge of outer islands fish bases in Vava'u and Ha'apai. These positions are responsible for only one or two staff, and are relatively low in the public service grading system.

- In the government environment agency, there are ten permanent staff (five women, five men) who work in marine and coastal conservation. One woman has an MSc, and the other four have a BSc. Three of the five men have diplomas, while the other two have no tertiary qualification.

- None of the Tongan NGOs are currently involved directly in marine conservation, and none have staff with a marine-related qualification.

- The private sector in Tonga is not particularly active at present. The most proactive local company is headed by a woman, who also plays a major role in the Tongan Chamber of Commerce.

4.2 Summary tables

Table 1 provides information on the gender breakdown of staff working in fishery science and management for the three countries. Solomon Islands, with 21%, has the lowest percentage of females, followed by the Marshall Islands with 27% and Tonga with 30%.

These figures exclude the observers as in nearly all cases, while they have completed the regionally recognised observer training course, observers do not have tertiary qualifications.

Note that, although the figures for Tonga show a higher overall percentage of women, this is mainly due to the number of women working for the environment department (50% of staff working in the marine conservation sector).

Table 1. Gender breakdown for staff working in the fields of fisheries science, management and conservation in the case study countries

Country	Solomon Islands			Marshall Islands			Tonga			**Totals**		
Total staff	**162**			**139**			**58**			**362**		
Gender breakdown	**M**	**F**	**% F**	**M**	**F**	**% F**	**M**	**F**	**% F**	**M**	**F**	**% F**
All agencies combined	132	30	19	117	22	16	43	21	33	292	73	20
Govt Fisheries	120	19	14	92	14	13	38	16	30	250	49	16
Management	38	5	12	13	7	35	11	6	35	62	18	23
Science/Res	17	2	11	8	2	20	12	1	8	37	5	12
Observers	61	6	9	33	0	0	6	0	0	100	6	6
Admin	3	5	63	0	3	100	8	9	53	11	17	61
Other*	1	1	50	38	2	5	1	0	0	40	3	7
Environment marine staff	2	3	60	19	7	27	5	5	50	26	15	37
NGO marine staff	10	8	44	6	1	14	0	0	0	16	9	36
Total sci and mgt only	**67**	**18**	**21**	**46**	**17**	**27**	**28**	**12**	**30**	**141**	**47**	**25**
Total sci and mgt + observers	**128**	**24**	**16**	**79**	**17**	**18**	**34**	**12**	**26**	**241**	**53**	**18**

* Other refers to other support positions such as fish market staff, maintenance staff, drivers and boat crew.

Table 2 looks at the hierarchical levels of staff by gender in each of the three countries. These levels show an average greater imbalance at the senior management levels.

The cumulative total column shows that there are no women and 18 men, in the top two levels of management (permanent secretaries, chief executive officers and divisional managers).

The situation improves at the third level of management, where numbers are around the overall average figure of 16% females.

Table 2. Sex disaggregated staffing levels in the government fisheries institutions in Tonga, Marshall Islands and Solomon Islands

		Tonga			Marshall Islands			Solomon Islands			Totals			Cumulative total		
Lvl	**Position**	**M**	**F**	**%F**	**M**	**F**	**%F**	**M**	**F**	**%F**	**M**	**F**	**%F**	**M**	**F**	**%F**
1	CEO, permanent secretary etc.	2	0	0	1	0	0	2	0	0	5	0	0	5	0	**0**
2	Divisional manager, etc.	0	0	N/A	4	0	0	4	0	0	8	0	0	13	0	**0**
3	Chief fisheries officer	0	0	N/A	0	3	100	3	0	0	3	3	50	16	3	**16**
4	Principal fisheries officer	2	0	0	1	0	0	16	3	16	19	3	14	35	6	**15**
5	Senior fisheries officer	0	1	100	14	2	13	19	5	21	33	8	20	68	14	**17**
6	Fisheries officer/ observer	13	5	28	48	5	9	70	7	9	131	17	11	199	31	**13**
7	Fisheries assistant/ other	21	10	32	20	1	5	6	4	40	47	15	24	246	46	**16**
	Totals	38	16	**30**	88	11	**11**	120	19	**14**	246	46	**16**			

5 FINDINGS — COMMON BARRIERS TO WOMEN'S PARTICIPATION

This section identifies the barriers that prevent or restrict young girls and women from entering and progressing in the fields of fisheries science and management. General constraints are included as they are contributing factors that perpetuate gaps in participation. The information in this section was collected as part of the in-country research.

Barriers or constraints can be grouped under four headings:

A. social context
B. access to opportunities
C. access to resources
D. institutional support.

5.1 Social context

5.1.1 Culture

Culture, traditional roles, perceptions and gender stereotypes determine behaviour, set boundaries and perpetuate beliefs that impact on women's participation in fisheries. In some societies there are cultural taboos that prescribe a woman's participation — they may determine whether she can fish, where she can fish, and the type of fishing method and equipment she uses (Tuara 1998; Lambeth, Hanchard and Aslin 2001).

In some societies, it is taboo for women to engage in diving, netting, trapping and fishing from a boat. In others, there is a belief that women bring bad luck and a poor catch when they are on a boat or anywhere near the fishing activity of men (Emberson-Bain 1998; White 2000).

Taboos restrict women's participation in the fisheries sector and reinforce the belief that fisheries activities are the domain of men, not women.

5.1.2 Traditional role of women

A girl typically learns from her mother or other female elders the traditional roles of being a daughter, wife and mother. She is raised to perform numerous roles of household manager, family caretaker, income earner and active church and community member. A boy, on the other hand, learns from his father or other men how to fish, hunt, build houses and canoes and protect his family. Men are taught to be the main income earner, the head of the house, the leader, the speaker and the decision maker (Graham and Paul n.d; Fidali-Hickie 2010; Maddison 2011).

Traditional roles of women set boundaries on what women can or cannot do. They are restrained by multiple obligations, limited time and mobility. This can have a negative impact on women's participation in education and the work force.

According to a fisheries officer in Solomon Islands, young girls sacrifice their education and are kept at home to look after the family, while boys, seen as future primary income earners, are encouraged to continue their education and seek good jobs. [5]

[5] Response from a fisheries officer at a focus group session in Solomon Islands.

5.1.3 Perceptions and gender stereotypes

Perceptions and gender stereotypes can have a negative impact on the fisheries sector in general, and on the work of women fisheries officers in particular. Table 3 provides some examples.

Table 3. Impacts of some common perceptions regarding women and fisheries

Perception	Result
A career in fisheries is unattractive and of low worth.	Female science students opt for what they percieve to be more appropriate and higher status careers in medicine, computing.[6]
Fisheries work is physically demanding.	Women work in clerical support desk positions.[7]
Women do not know anything about fishing.	Fishermen do not accept advice from women fisheries officers, preferring advice from male fisheries officers.[8]
Women are not technically minded.	Women are not encouraged to understand science or undertake research work.[9]
Women fisheries officers require special treatment.	Combined field research teams require a larger budget to cover the cost of separate facilities, including accommodation and toilets. It is, therefore, cheaper to keep using men in the field rather than encouraging women to participate as well.[10]

Such perceptions need to be changed in order to increase and sustain the number of women participating in fisheries in general, and science and management in particular.

One of the initial barriers to be overcome is this negative perception of the role of women in a field of science and technology that is portrayed by the mass media as being the preserve of men and boys (UNESCO 2010).

5.2 Access to opportunities

5.2.1 Education

Universal access to good quality education should be the right of all. Without education, the career choices for young girls are limited. In Solomon Islands and, to a lesser extent, Marshall Islands, the study shows that there are fewer girls than boys receiving an education. In Tonga, an approximately equal number of girls and boys attend all levels of school.

[6] In Tonga, science students do not want a career in fisheries but prefer high status jobs in medicine and computing. This is based on feedback from senior science students and teachers at Tonga High School.
[7] Women hold 60% of clerical jobs in the fisheries sector.
[8] Experience of a senior Marshallese fisheries officer.
[9] Source: MRC 2006
[10] Experience of a Solomon Islands fisheries officer restricted from doing outer island field work due to lack of accommodation.

In Marshall Islands the dropout rate for girls is higher in secondary schools due to teen pregnancy and family obligations. However, girls do better at the tertiary level (EPPSO 2003; EPPSO and SPC 2008). More women than men obtain marine scholarships, and women rather than men pursue graduate studies (Director of National Training Council, pers. comm).

In Solomon Islands fewer girls make it through to form 6 (senior) science and so fewer girls than boys obtain scholarships to do first degrees, and very few young women go on to do postgraduate degrees (Fidali-Hickie 2010). In Tonga, girls tend to do better academically in high school, and more girls than boys pursue science subjects. Despite this, more boys than girls are awarded scholarships, and most Tongan science students pursue a career in medicine or teaching.

5.2.2 Employment

Employment data show that there are fewer women than men working in the fisheries sector in general. Although some women are now working in non-traditional areas, employment data show that there are more men than women holding positions in government, NGOs, and sub-regional and regional organisations.

This is still less than the critical mass needed to show society that women are capable of working in the male dominated areas of science and management (see Etkowitz, Kemelgor and Neuschatz, 1994, for a general discussion of critical mass in regard to participation of women in science).

The only area where women outnumber men is in private sector tuna processing, where the majority of women work as unskilled labourers on the processing line (Tuara and Nelson 2000; Wichman 2001; Vunisea 2006; Sullivan and Bidesi 2008). In one Marshall Islands fish factory, 65% of the staff are women who are mainly responsible for loining tuna fish. There are some Marshallese men and women working in the laboratory, conducting water quality and histamine tests and carrying out hazard analysis and critical control points (HACCP) quality control work, but these positions are mostly filled by recruits from overseas, as few Marshallese have the required skills. [11]

In Solomon Islands and Tonga, there is currently a freeze on public sector employment, even though vacancies exist. This means that a number of Solomon Islands marine graduates do not have a job in the fisheries sector.

In Tonga, when a staff member leaves, he or she is not replaced. The freeze on employment is a barrier, but it is important to note that, prior to this, the number of women recruits was low. According to one fisheries scientist, in Solomon Islands there have been virtually no new posts within the sector, and existing posts rarely become vacant due to low attrition rates.

In Samoa, a similar situation to that in Solomon Islands is currently occurring. Three women graduates with an MSc in Marine Science have returned to find that, due to budget constraints, there are no jobs available in the fisheries department. They have found employment elsewhere, one in the environment sector, and two in the private sector (M. Sapatu, Senior Fisheries Officer, Samoa Ministry of Agriculture and Fisheries, pers. comm).

These examples reaffirm the need to carry out a thorough training needs analysis in the sector, with a long-term view of future requirements, before embarking on an ambitious recruitment campaign.

[11] See Table A-12 for Pan Pacific Foods Inc. in Annex 4. The table shows the different levels and types of work carried out by Marshallese and non-Marshallese men and women.

5.3 Access to resources

Information and networking

There is a lack of gender sensitive fishery science and management career information. There is also limited or no outreach to young people who could consider a career in fisheries.

There are very few female role models or champions who can put an end to gender stereotypes and misconceptions that perpetuate the myth that fisheries careers are for men.[12] Although there are women in the sector, they are not being used as role models at the national level.

There are no women's fishery networks in any of the three countries studied. There are also no organised groups for women scientists, and no active alumni associations. Without a network, women working in a male-dominated fisheries sector are marginalised, with no support system.[13] They have no voice (outlet) to raise issues, share experiences, support each other or lobby for change. There is, therefore, limited opportunity to inspire and attract young women to the sector.

Networks of women working in the fisheries sector could help get recognition and validation for the role of women. They could share concerns about the sustainability of fisheries resources, and link researchers and activists interested in fisheries development issues with women and women's groups who are engaged in fisheries in the region.

Active networks have an impact on the ground. Networks at national and regional level, with links to mainstream women's and gender programmes, can have a lasting impact. Fisheries specialists, especially researchers, have raised awareness of the importance of women in fisheries and this has led to a few such networks being formed in other parts of the world, such as in the lower Mekong Basin, the Philippines and in Latin America (Williams, Williams and Choo 2001).

5.4 Institutional Support

5.4.1 Working conditions for women

With the help of fisheries departments, NGOs, the private sector, development organisations and donor agencies, women are being provided with opportunities that facilitate choice, but more is needed at the institutional level to build the capacity of key stakeholders in the fisheries sector to promote gender mainstreaming in organisational change and management.

With more women joining the sector, their needs may be overlooked if their contribution is not recognised or valued. Employing more women will not address gender imbalance unless a supportive institutional framework is in place to keep women in the sector and attract others.

The lack of relevant policies can restrict recruitment and retention of staff. There is no gender policy for fisheries in Solomon Islands, Marshall Islands and Tonga, although there are national policies. Solomon Islands has the National Policy on Gender Equality and Women's Development (2010–2015) and Tonga has the 2001 National Policy on Gender and Development.

[12] Global education, an AusAID funded website, uses an SPC report on the role of Marshallese women in fisheries to dispel stereotypes. See www.globaleducation.edna.edu.au/globaled/go/pid/1887

[13] Discussion with fisheries scientist Kristina Fidali-Hickie, who stressed the need for a national network for women in fisheries.

Marshall Islands had the National Women's Policy 1996–2001, which has not been replaced (SPC 2010 a, b, c). Unfortunately there seems to be very little knowledge of these policies (current or expired) outside of the agencies responsible for women. Limited knowledge about gender and gender policies leads to misunderstandings and the belief that 'gender' means 'women' and is the concern of departments responsible for women's affairs. Fisheries departments have very little, if any, contact with the women's departments, and vice versa.

Working in an unsafe environment that does not promote fair workplace practices can deter women from applying for jobs in any sector. Work place policies ensure that the working environment is one that promotes good work practices for both men and women.[14]

Policies need to ensure that fisheries staff members have the support and facilities they need. For example, working alone with men may restrict the ability of women to carry out their work. Unless facilities are available to support the work of both men and women, it can be difficult for men and women to undertake fieldwork together.

Separate secure accommodation and amenities for both men and women fisheries officers is one requirement. In order to attract and support staff of both sexes equally, equitable maternity and paternity leave are also needed, as well as childcare considerations within the community.

5.4.2 Career path mobility

An inability to move upwards can lead to frustration and non-performance. Most senior and middle management positions in fisheries departments are held by men. Although women are now in technical positions, data show that in some countries they appear to be less likely to be promoted to decision-making levels.

One Solomon Islands informant said that most women in the department do not have a formal qualification but some attained a mid-level of seniority through many years of experience. There are no specific programmes in place to encourage women into senior level positions.

Table 4 summarises some of the common barriers discussed above.

[14] For example, the Health and Safety policy commits the Cook Islands Ministry of Marine Resources to provide a safe and healthy work environment for all staff, while the Conduct and Behaviour policy states that all employees must treat each other with courtesy and respect.

Table 4. Common barriers to women's participation in fisheries

Factor	Sphere of influence	Possible impact on participation
Social context		
Culture	Social norms and codes of practice determine the behaviour of girls and boys, men and women	Customs and traditions reinforce the belief that fishing and the management and development of marine resources are men's concerns. Cultural taboos restrict women's participation in fisheries i.e. methods, equipment and location. E.g. in some cultures, women on boats are thought to bring bad luck.
Traditional roles	Set boundaries that delineate women as the primary caregivers responsible for home and family. Multiple obligations restrict women's time and mobility (distance from home)	Women have difficulty balancing the responsibilities of family and work, particularly when fieldwork is required (long absence from home).
Perceptions and stereotypes	Create beliefs about what women can and should do	Women don't know anything about fishing is one example of a perception that can undermine and affect the work of women fisheries officers. Fishermen do not accept the advice of a woman fisheries officer if they have this perception. In some cultures it is not considered proper for a woman to work in a male-dominated field. It is considered even less proper for a woman to go on long trips with a group of men – this can harm her reputation.
Access to opportunities		
Education	Broadens the scope of life choices	In some countries, fewer girls studying science in secondary and tertiary levels means few obtain scholarships in marine science and management.
Jobs	Empowers women through economic independence	Women are moving into non-traditional and technical areas but there are still fewer women in fisheries agencies. Still less than the critical mass that would encourage other women to enter the sector.
Training	Provides skills to carry out tasks	Fewer women fisheries officers results in women's training needs being overlooked. The training should be the same for both men and women, but at the same time it should take into consideration the skills a woman may need to work in a male-dominated environment.
Access to resources		
Information	Educates and informs	A lack of gender sensitive career information combined with limited or no outreach does not encourage young people to consider a career in fisheries
Role models and mentors	Inspires youth	An absence of female role models perpetuates gender stereotypes and myths that fisheries careers are for men.
Network	A platform to voice issues, lobby, inspire others	Without a network, women working in a male-dominated fisheries sector have no support system and are marginalised.
Institutional support		
Working conditions	Affects recruitment and staff retention	A lack of relevant supportive policies can restrict recruitment and retention of staff.
Career path mobility	Encourages and supports staff development	In a hierarchy where men dominate the senior management positions, it can be difficult for women to move upwards. This can lead to frustration, non performance, and staff resignation, or movement to a position in another field of work.

6 APPROACHES TO ADDRESS BARRIERS

This section provides examples of approaches used to break down the barriers that restrict women's effective participation in science and management.

6.1 Social context

Dispelling cultural taboos, perceptions and gender stereotypes

Cultural taboos restricting women from participating in the sector are beginning to disappear, largely due to women taking up jobs in fisheries departments, the private sector and NGOs. Solomon Islands women working successfully as observers and tuna taggers on board fishing vessels dispel the belief that women on or anywhere near a boat bring bad luck.

Marshallese women conducting stock assessment field surveys dispel the perception that women cannot do physically demanding work. Marshallese women working as private sector quality control analysts dispel the gender stereotype that women are not technically minded.

Tongan women managing outer islands fisheries bases dispel the belief that women cannot make decisions about fisheries and should be in support positions.

Though these are signs of progress, there is still a long way to go, and more work is needed by regional organisations to accelerate this progress.

6.2 Access to opportunities

6.2.1 Education

Development agencies provide both scholarships and training courses to national students. In most cases they do try and ensure a gender balance.

In Solomon Islands, the Australian government provided 44 marine and environmental scholarships (33 to men and 11 to women) as follows: 1991–1996 (sixteen to men and four to women), 2000–2005 (six to men and two to women), and 2006–2010 (eleven to men and two to women).[15] Scholarships to study agriculture, forestry and fisheries totaled 69 (fifty-nine to men and ten to women). From 2006–2009 the Japanese government implemented eight training courses in community-based fisheries diversification, community fisheries planning, and sustainable coastal fishing techniques. These courses were attended by seven men and one woman from the Ministry of Fisheries and Marine Resources (A. Yoko, JICA Solomon Islands office, pers.comm).

In Tonga, the New Zealand Government provided 281 scholarships for tertiary education between 1997 and 2009. Of these, 140 went to women and 141 to men. Information on courses of study was not available for a more thorough analysis.

[15] Feedback from Australian High Commission in Solomon Islands to local consultant K. Fidali-Hickie.

From 2001 to 2010, the Japanese government provided 15 training courses in Marshall Islands in environmental management, environmental protection, deep-sea mineral resources, integrated resource management, fishing techniques, refrigeration systems, quality assurance of marine food, handling and primary processing of fishery products, maritime search and rescue, and community-based fisheries diversification.

Eleven trainees from MIMRA, three from RMI Environmental Protection Agency, and one from the Ministry of Justice attended the courses. Four courses were attended by women from MIMRA—one course on deep-sea mineral resources, one integrated resource management course and two courses on community-based fisheries diversification (T. Jack, JICA Marshall Islands office, pers. comm).

At the regional level, SPC provided two postgraduate scholarships to science students as part of the ProcFish project.[16] Both the Oceanic Fisheries Programme and the Coastal Fisheries Programme mentor graduate and postgraduate students. In 2010 the Coastal Fisheries Programme provided supervision to four masters students and one postgraduate student from the University of the South Pacific who were studying aquaculture. In 2011, two postgraduate students will be mentored by the Aquaculture Section.[17]

6.2.2 Internships

In Marshall Islands the use of student interns by both government and NGOs has proven successful in providing students with on-the-job training opportunities. MIMRA also has a career day for tertiary students.

Cook Islands Ministry of Marine Resources is trialing a student intern programme with one young female high school graduate and one male final year high school student as a means of encouraging young people to the sector (P. Maru, pers. comm).

6.2.3 Employment

Fisheries departments, environment departments, environmental NGOs, the private sector and academic institutions are the main providers of jobs in the fisheries sector. A freeze on government employment has meant that marine studies graduates in Solomon Islands have found employment in the private sector or in environmental NGOs.

In 2002, MIMRA employed the first woman scientist as a community-based officer. Earlier, a woman held a management post in policy.

Today, the number of women in technical positions has increased to nine, with another two currently on overseas study. Of significance is the fact that women scientists hold two positions of authority, the Chief of Offshore Oceanic and Industrial Affairs, and the Chief of Inshore and Coastal and Community Services (B. Muller, Chief of Offshore and Industrial Affairs, MIMRA pers. comm.).

[16] Discussion with FAME Coastal Fisheries Manager concerning SPC's role in providing marine scholarships.
[17] SPC Aquaculture Adviser's presentation to 7th HOFs meeting 2011.

6.2.4 Training and attachments

Regional organisations such as FFA and SPC help develop the skills of fisheries officers through workshops, attendance at meetings and attachments. Information from SPC annual reports for 2010 (Figure 3) shows that women comprise 19% of the trainees (SPC 2010d). This probably approximates to the gender balance in the sector. Of particular interest is the fact that a higher percentage of the women trainees attended courses in oceanic fisheries, rather than in the traditionally accepted women's area of coastal fisheries. This is probably a reflection of the increasing number of women being employed in oceanic fisheries jobs.

According to monitoring specialist Brogan, young Pacific Island women are increasingly turning to careers in oceanic fisheries. They may be motivated and encouraged by the training and employment opportunities that are opening up with the new Tuna Commission (Western and Central Pacific Fisheries Commission, WCPFC).

Although the final selection for observer trainees rests with national governments, the Oceanic Fisheries Programme can only encourage fishery departments in Pacific Islands countries and territories to include women (D. Brogan pers. comm).[18] The region's observer programme has provided 100 per cent observer coverage on purse seine vessels with the support of SPC and FFA. A total of 150 observers has been trained, mainly by SPC training officers, but Papua New Guinea delivers its own training courses to nationals, and other countries are developing this capacity (FAME 2010).

In 2010, the Oceanic Fisheries Programme provided training in data processing, tuna stock assessment and tuna tagging. National tuna data workshops for staff who collect, manage and disseminate data were held in Solomon Islands, Federated States of Micronesia, Nauru and Kiribati. The Coastal Fisheries Programme trained men and women in reef fisheries survey methodologies, collection and analysis of data, and the production of resource management policies and plans (ibid.).[19]

Figure 3 provides graphical information on participant numbers from the three case-studied countries for training provided by SPC.

SPC's Coastal and Oceanic Fisheries Programmes continue to provide training attachments to national fisheries officers. In 2010, as part of the Coastal Fisheries Science and Management section, attachment training in desktop publishing was provided to one fisheries officer from Cook Islands and one from Fiji for the development and dissemination of fisheries information. Currently, an officer from Samoa is on a one-year attachment to learn more about stock assessment, analysis and the production of management plans. She will be leaving shortly for Marshall Islands to do one month of fieldwork on invertebrates and aquarium fish stocks (M. Sapatu, Trainee Attachment, pers. comm).

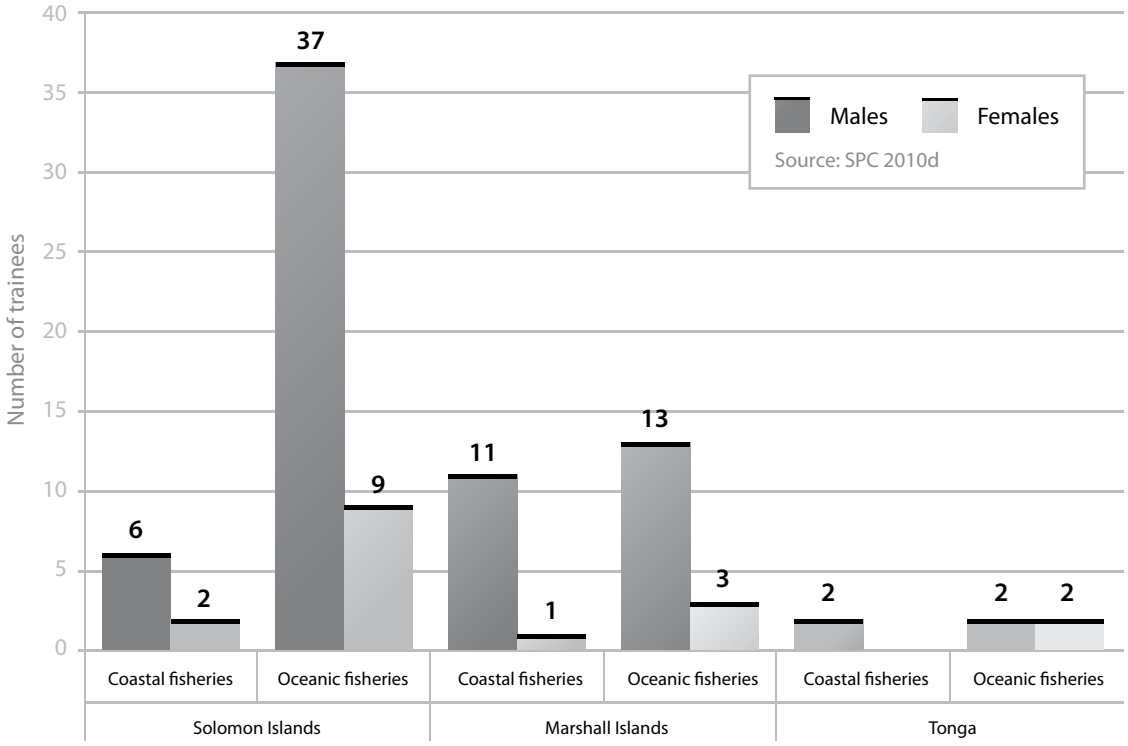
FFA has provided training and attachments for Pacific Islands fisheries personnel in fisheries management in areas such as observer training; monitoring, control and surveillance (MCS); licensing; dockside boarding; prosecution; and other legal areas. An analysis of data from 2007 to 2010 shows that only 17 out of 204 participants, or 8%, were female.[20]

[18] Fisheries Monitoring Specialist Deirdre Brogan works in the SPC Oceanic Fisheries Programme. She is one of the first full-time female observers on board tuna vessels in the Pacific Islands and is active in providing training to other observers in the region.

[19] For country specific assistance see FAME 2010 Annual report, Annex 4.

[20] Data for analysis provided by Penny Matautia, FFA Manager, Human Resources, Administration and Performance Management.

Figure 3. SPC training to staff of fisheries officers from Solomon Islands, Marshall Islands and Tonga in 2010



6.3 Access to resources

6.3.1 Producing gender-sensitive career information

In addition to the production of curriculum materials, gender sensitive career information is needed to support outreach by fisheries departments. The information needs to show that fisheries careers are equally suited to men and women.

SPC and FFA have produced reports on women in fisheries and gender in the tuna industry, as well as profiles of women in non-traditional roles. By using positive role models, this information elevates fisheries as a career choice for women. Observers and women scientists are featured in the publications as examples to other women, and to men. The SPC Women in Fisheries Bulletin, first produced in 1997, continues to provide stories for and about women in the sector.

As more women enter the traditionally male-dominated fields of fisheries research and management, their skills and leadership are dispelling other beliefs that may have kept interested women from entering these fields (White 2000).

The Japan International Cooperation Agency (JICA) has produced national gender profiles, including one each for Solomon Islands, Marshall Islands and Tonga. The profiles are useful sources of information that include policy, legislation, socio-economic data and information on gender in fisheries (JICA 2010 a, b, and c).

6.3.2 Using the media to portray fisheries in a positive light

In Marshall Islands the government fisheries department (MIMRA), the environmental semi-government authority (RMIEPA), the NGO for the environment — the Marshall Islands Conservation Society (MICS) — and academic institutions (RMI–USP) work with the media to provide public awareness programmes about their work. Through the media, the fisheries sector's profile is raised and the importance of marine resources is elevated, as is reflected in the co-operative projects among stakeholders.

Young people are more likely to be attracted to a career that is exciting and is featured as an integral part of their life, as it is in the Pacific Islands.

6.3.3 Role models

Positive female role models should be enlisted. This can begin in the classroom; young girls and women need women teachers and scientists as mentors and role models. Mentoring programmes are known to benefit both mentor and student.

Other role models include Solomon Islands women observers, port samplers and tuna taggers, female Pacific Island nationals working in regional fisheries and environmental organisations, and female fisheries scientists and managers working in national fisheries and environmental agencies. The expertise and knowledge of such role models need to be tapped to encourage women into the fisheries sector, as well as to support those currently in the sector.

In Marshall Islands, fisheries staff from MIMRA visit schools on Careers Day to talk to secondary school students about the work they do.

6.3.4 Networks

Women in fisheries networks have been set up around the world, including in Fiji (1992), Africa (2010), United States of America (1983) and the Netherlands (2000).[21] Networks recognise and validate the role of women in the sector. They allow members to share concerns about the sustainability of fisheries resources, and link researchers and activists interested in fisheries development issues with women and women's groups that are engaged in fisheries in the region.

Fisheries specialists, especially researchers, have raised awareness about the importance of women in fisheries and this has led to a few networks being formed in other parts of the world, such as in the lower Mekong Basin, the Philippines and in Latin America (Williams, Williams and Choo 2001).

Active networks have an impact on the ground. Networks at national and regional level, with links to mainstream women's and gender programmes, offer the opportunity to make a lasting impact.

[21] Source: A web search of women in fisheries network provides sites of networks around the world.

6.4 Institutional support

6.4.1 Being an equal opportunity employer

As equal opportunity employers, fisheries departments aim to hire qualified men and women.[22] An equal opportunity policy (combined with educational qualifications) enables women not only to enter fisheries, but also to take on jobs in research, management and other areas not traditionally entered by women.

In 2002, the Marshall Islands Marine Resources Authority employed the first woman scientist as a community-based officer.

Today, the number of women in technical positions has increased to nine, with another two on overseas study. At the College of the Marshall Islands (CMI), the tertiary institution affirms its commitment to the goal of equal opportunity for its faculty, students, staff and administrators. The College does not discriminate in matters of employment or of admission to educational programmes and activities on grounds of race, colour, gender, religion, age, sexual orientation, national or ethnic origin, ancestry, disability, marital status or veteran status.[23]

As noted previously, Solomon Islands women are now taking up jobs traditionally held by men in the sector.

6.4.2 Promoting gender equality in work programmes

Fisheries departments can implement work projects and programmes that recognise and address the needs of women in the sector. In Solomon Islands, the fisheries department set up a Women in Fisheries Unit. Unfortunately, this ended in the 1980s and has not been replaced.

At the regional level, SPC implemented the Women's Fisheries Development Project in 1994 to provide support mainly to women in the sector. The Women in Fisheries Bulletin and women in fisheries reports were produced to raise the profile of women and acknowledge their contribution to the sector. Assistance was provided in terms of workshops and attachments. The Project was renamed the Community Fisheries Development Project in 1999 and the focus changed from assisting women to assisting communities.

From 2010 the Coastal Fisheries Science and Management Section continued the work of supporting women as part of its support to both men and women. According to the Section Adviser, the current community-based management programme provides assistance to women in communities so they can be involved in resource management, and also provides skills training to female fisheries officers in such areas as finfish/invertebrate resources assessment and analysis (I. Bertram, pers. comm).

[22] The Cook Islands Ministry of Marine Resources Human Resources policy states that the Ministry is an equal opportunity employer.
[23] Source: College of the Marshall Islands website www.cmi.edu

7 PROPOSED SPC INTERVENTIONS

The study has shown that the main barrier to having more women in fisheries science and management is people's perceptions and the attitudes of society. These are often rooted in the culture and customs of a country. There is a need to try and change the way people perceive a career in fisheries. Fisheries science and management needs to move up the ladder of preferred careers, up from close to the bottom rung where it appears to sit in many Pacific Island countries.

It was the intention that, in choosing one country from each sub-region, we would have a reasonable basis for making general recommendations for the Pacific on appropriate actions to increase the participation of women in fisheries. However, there is no such thing as a typical Pacific Island country and therefore the recommendations are not necessarily appropriate for all countries. Some countries are already much further ahead than others in terms of women's involvement in the fisheries sector. Nonetheless, even these more progressive countries still have a long way to go, and may benefit from applying gender analysis (see Glossary of Terms) and gender mainstreaming tools (see the toolkit in Annex 6).

A list of interventions that could be undertaken to make a career in fisheries science and management more accessible to women and thereby improve the gender balance in the sector is given below. However, it is important to note that there is a freeze on public service employment in some countries, and opportunities in the sector vary by country, depending on how dynamic the sector is. Some forward planning and discussions with human resources departments, senior management in fisheries, environment divisions, environmental NGOs, and the private sector is needed before embarking on ambitious recruitment programmes that may lead to having qualified graduates who cannot find employment.

SPC's SciCOFish Project can play a role in assisting countries to implement many of these recommendations. Others would require collaboration between SPC divisions and other national and regional institutions.

Potential interventions are listed as A) those that the SciCOFish project might reasonably be expected to undertake, B) those activities that would require significant collaboration with other partners, and C) those where SciCOFish could tap into existing projects.

A SciCOFish interventions

1. Produce a summary booklet of the findings of this report, highlighting barriers, approaches and interventions. The information would be of use to fisheries sector stakeholders.
2. Support the development of promotional material, and use special interest stories of successful women in the sector, with the aim of encouraging more young women to embark on a fisheries career. This material can help to open the public's eyes (changing society's perception) to the varied aspects of working in fisheries. As an initial step, produce a gender balanced promotional pamphlet to attract more young people into fisheries science and management. This could be followed by a short promotional DVD that could be distributed to schools, human resource departments, television stations, etc. around the region.
3. Undertake a training needs analysis in the fishery sector to determine short- and long-term expertise requirements, so that future training and scholarships are targeted appropriately.
4. Facilitate dissemination of information to schools, universities and human resource departments on opportunities for training and graduate studies in fisheries and marine science and management.

5. Provide funding for scholarships in fisheries science and management at the postgraduate level as a means to promote capacity building.

6. Allocate funding to fisheries staff training and attachments in the areas of oceanic and coastal fisheries data analysis and management, stock assessment methods and the development of management policies, plans and strategies. With a view to improving the gender balance in these areas, the training could include facilitating short-term attachments in the fisheries sector (with regional and national organisations and the private sector).

7. Provide funding to support short-term attachments for youth in the fisheries sector. In collaboration with government, NGOs and the private sector, selected final year science student interns would be mentored by experienced fisheries staff and given a variety of interesting tasks to introduce them to fisheries science and management. The aim would be to attract potential staff with an emphasis on increasing the ratio of women currently employed in the sector.

8. Support national (upon request), sub-regional, and regional women in fisheries networks. In this male-dominated sector it is particularly important for working women to have a platform to share their experiences and learn from each other in order to overcome specific problems they are facing.

9. Acknowledge appropriately skilled individuals in the region by developing a gender-balanced database of qualified nationals with experience in fishery science and management for use as consultants and resource persons in relevant national, sub-regional and regional workshops and meetings.

B Collaborative interventions

10. In collaboration with ministries of education, and regional and international secondary and tertiary educational institutions such as USP and UNESCO, urge curriculum development units to put more emphasis on marine resource education in both primary and secondary schools as a major factor in the life of Pacific Islanders. Material developed would need to be gender balanced, avoiding stereotyping and making it clear that fisheries is a potential career for young people of both sexes.

11. In collaboration with USP, develop course material of a practical nature which provides marine science and marine affairs graduates with the practical, analytical and writing skills needed to conduct, for example, a fishery stock assessment, produce a policy paper or write a management plan.

12. Where necessary (as in Solomon Islands) investigate ways in which girls can be assisted to continue their education through to the end of secondary school and achieve high academic grades, thus enhancing their potential to gain an equitable share of scholarships.

13. Provide assistance to help fisheries departments create a supportive work environment that attracts potential women employees and recognises and supports existing women staff. For example, assist in developing equal opportunity policies as part of a work environment that promotes good work place practices such as maternity and paternity leave, safe working conditions, and a policy that deals with sexual harassment.

C Other

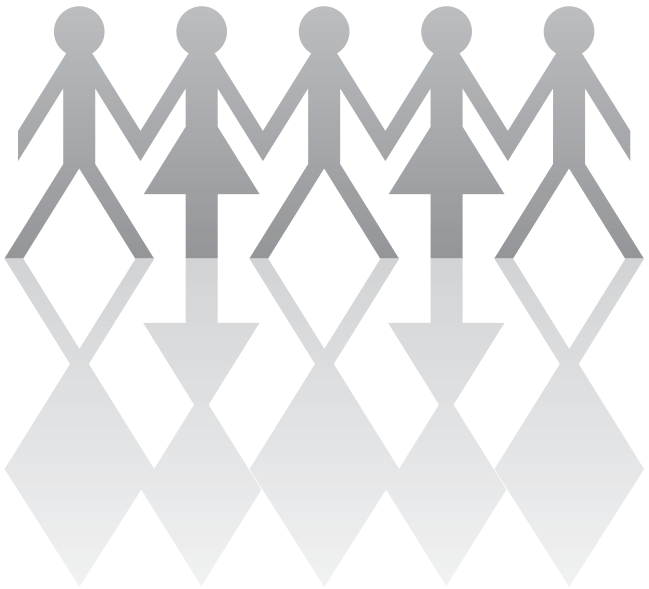
14. Under the SciCOFish or DevFish Project, provide women and men in the private sector with training in water quality testing, and quality control methods such as hazard analysis critical control points (HACCP) so that they can perform skilled jobs in fish processing plants.

A final word

This study is about gender and equality, not about women. There is a need to emphasise that a fisheries career can be equally acceptable for women as well as men. The approach should not be so much to increase women's participation, but rather to raise the status of fisheries as a career for young people who have an interest in or who are studying science. At the same time, the fact that women are just as able to participate in the sector as men needs to be reinforced.

While this study has shown that there is a gender imbalance in the sector, women should not be pushed into fisheries science and management if a country does not need more fisheries scientists and managers and if women are not interested in pursuing such careers. However, where there is a need and an interest, women should have the options made clear, the opportunities made available, and the choice left to the individual concerned. (For a fuller discussion on this topic see Bouville 2007.)

Women who have an aptitude and desire for a career in fisheries science and management need to know that this is in fact a perfectly reasonable option for them, and equal opportunities need to be made available for them to choose it.



GLOSSARY OF TERMS

FISHERIES SCIENCE [24]	Refers to the academic discipline of managing and understanding fisheries which draws on the disciplines of oceanography, marine biology, marine conservation, ecology, population dynamics, economics and management to attempt to provide an integrated picture of fisheries.
FISHERIES MANAGEMENT [25]	Draws on fisheries science in order to find ways to protect fishery resources so sustainable exploitation is possible. Fisheries management is often referred to as a governmental system of appropriate management rules based on defined objectives and a mix of management means to implement the rules, which are put in place by a system of monitoring control and surveillance. The concept of community based fisheries management is also valid, with the people who depend on the resources playing a major role in their management. Modern day thinking, as well as traditional common sense, favours an Ecosystem Based Approach (EBA) to fisheries management.
AQUACULTURE [26]	The culture (farming) of marine and freshwater animals. In the Pacific it centres on a small number of resources; black-lip pearl oyster, penaeid shrimp, tilapia, milkfish, giant clam, and seaweed.
COASTAL FISHERIES	Includes a diverse range of finfish and invertebrates demersal (bottom dwelling) species, and those that inhabit shallow water habitats, and whose individual movements are generally restricted to coastal areas. Management is undertaken on national and community levels.
OCEANIC FISHERIES	Include tunas, billfish and allied species. These resources are found in open-water habitats, and generally move extensively across exclusive economic zones and high seas areas. A few, well-studied species form the basis of the region's industrial tuna fisheries, which are managed through national, regional and international frameworks.
ECOSYSTEM APPROACH TO FISHERIES [27]	An approach which balances diverse societal objectives by taking account of the knowledge and uncertainties about biotic, abiotic, and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries. This requires managers to plan, develop, and manage fisheries in a manner that addresses the multiplicity of societal needs and desires without jeopardising the options of future generations to benefit from the full range of goods and services provided by marine ecosystems.
GENDER [28]	Refers to the sociologically-and culturally based distinction between men and women. One's gender is therefore most often comprised of those roles and attributes that are not purely "natural" or biologically determined, but are rather dictated by norms and traditions. Because gender is not biologically given, the attributes of both male and female gender can (and do) change over time and across cultures.
GENDER ANALYSIS	Also referred to as gender-sensitive, gender-based or gender-aware analysis, this is analysis that (a) makes visible any disparities between genders and (b) analyses these disparities according to established sociological (or other) theories about gender relations.
GENDER EQUALITY	Equality exists when both men and women are attributed equal social value, equal rights and equal responsibilities, and have equal access to the means (resources, opportunities) to exercise them.
GENDER EQUITY	The process of being fair to women and men. To ensure fairness, measures must often be available to compensate for historical and social disadvantages that prevent men and women from otherwise operating on a level playing field. Equity leads to equality.
GENDER MAINSTREAMING	The process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality.
GENDER STEREOTYPES	The ideas that people have about what boys and men, girls and women are capable of doing. For example, women are better fish processors and men are better fishers.
SEX	Usually, sex is understood to refer to the biological difference between male and female bodies.
SEX DISAGGREGATED DATA	Data or statistics that are collected and presented by sex to show the respective results for women and men separately. Sometimes the term gender disaggregation is used to refer to sex disaggregated data.

[24] Definitions adapted from Royce 1996, and Wikipedia online encyclopedia.
[25] Definition from FAO, 1997, Fisheries Management, and Cochrane and Garcia, 2009.
[26] Definitions for aquaculture, coastal fisheries, and oceanic fisheries from Gillett, B and I. Cartwright. 2010.
[27] Definition adapted from FAO 2003, The Ecosystem Approach to Fisheries, and Cochrane and Garcia, 2009.
[28] Definitions for gender terms from UNDP 2007, and ECOSOC 1997/2.

ANNEX 1

TERMS OF REFERENCE

1. Conduct an initial literature review of gender roles in the fisheries sector in the Pacific with a focus on the three selected countries.

2. In the three selected countries, collect and analyse sex disaggregated data in the following areas of employment (public sector, private sector, NGOs etc), in the following fields:

   a) Tuna fishery observers and port samplers (including the selection process)
   b) Collection of any type of monitoring data in coastal fisheries (community, provincial and national)
   c) Data entry (oceanic and coastal)
   d) Fisheries biological and/or ecological research (oceanic and coastal)
   e) Data analysis and stock assessment (oceanic and coastal)
   f) Fisheries management (oceanic and coastal)
   g) Post harvest in coastal fisheries

3. Identify and assess factors nationally that form barriers for women's participation in the above fields of work in each of the three countries, including an analysis of national sectoral policies; legislation and regulatory frameworks; employment conditions; and social and customary attitudes, practices and beliefs both generally and for fisheries specifically.

4. Identify specific approaches to address barriers to women that are identified in the above fields of work, and identify opportunities for specific interventions in each of the three countries.

5. Report back to the stakeholders in each of the three countries to ensure a participatory approach and national buy-in to the results.

6. Produce a report covering the results and findings, including annexes and a gender mainstreaming toolkit, as per the outputs specified below.

OUTPUTS

1. A report of not more than 20 pages summarising the results with recommendations on approaches to achieve the gender objective of this project.

2. As an annex to the report, a database of key regional and international resources for mainstreaming gender in the fisheries sector, designed as a structured list with hyperlinks to sector-specific toolkits, manuals, analysis etc.

3. Other annexes as needed to present data collected or other information relevant to the consultancy.

4. A user-friendly gender mainstreaming toolkit for the fisheries sector, complete with gender indicators, which will aid non-gender experts in the national and regional fisheries sector in mainstreaming gender equality into their work.

ANNEX 2

CAREERS IN FISHERIES SCIENCE AND MANAGEMENT

If we are to try and encourage a wider participation by women in fisheries science and management, it is useful to elaborate on the variety of career paths that can be followed. Below is a selection of the various positions that may be pursued in a typical Pacific Island government fisheries division. A number of them are also applicable for careers with environment departments and environmental NGOs in the Pacific. The information is provided in a tabular form, along with the likely educational requirements, generic duty list and potential career paths. An individual would probably progress along the career path based on performance and completion of higher degrees, such as a masters. Note that fisheries divisions within the Pacific are usually small and operate on limited budgets.

Thus it is likely that individuals may be called on to undertake multiple roles. For example, fisheries management and research may sometimes be combined in a single position. These positions are equally suited to both male and female candidates. The career paths in all cases have the potential to lead to the head of the fisheries department, depending on the individual merits of the employee.

Table A-1. (Part.1) Careers in fisheries and management

Position	Duties	Educational requirements	Potential career path
Fisheries management officer, inshore	Using the best available information and utilising the precautionary principle where required, prepare management plans for inshore fishery resources. Assist with community-based fisheries management advice, incident response and some fisheries monitoring.	Diploma or degree in fisheries management or equivalent	senior inshore fisheries management officer → principal/chief inshore fisheries management officer → director of inshore fisheries
Fisheries research officer, Inshore	Undertake research on inshore fisheries resources, and prepare situation reports on resources. Provide effective and professional fisheries advice to internal and external clients as well as being involved in fisheries habitat enhancement projects, community fisheries development, incident response and some fisheries monitoring.	Diploma or degree in fisheries science, biology, ecology or equivalent	senior inshore fisheries research officer → principal/chief inshore fisheries research officer → director of inshore fisheries
Fisheries management officer, offshore	Using the best available information and utilising the precautionary principle where required, prepare management plans for offshore fishery resources. Assist with monitoring, control and surveillance (MCS) activities.	Diploma or degree in fisheries management, information technology, or equivalent, depending on role to be fulfilled	senior offshore fisheries management officer → principal/chief offshore fisheries management officer → director of offshore fisheries
Fisheries research officer, offshore	Undertake research on offshore fisheries resources, and prepare situation reports on resources for use by the management and licensing sections. Provide effective and professional fisheries advice to internal and external clients as well as being involved in fisheries habitat enhancement projects, community fisheries development, incident response and some fisheries monitoring.	Diploma or degree in fisheries science, biology, ecology, etc. or equivalent	senior offshore fisheries research officer → principal/chief offshore fisheries research officer director of offshore fisheries
Fisheries research officer, aquaculture	Participate in mariculture and aquaculture projects in the country for improved food security, and possibly export.	Diploma or degree in aquaculture	chief fisheries officer, aquaculture

Table A-1. (Part.2) Careers in fisheries and management

Position	Duties	Educational requirements	Potential career path
Fisheries economist	Provide information and analyses in the development of policies, strategies and innovative, participatory approaches to further develop fisheries in the context of environmentally and socially sustainable fisheries and rural poverty reduction. Undertake data collection, micro- and macro-economic and social analyses for assessing the impact of policies, strategies and projects on the beneficiaries, the fisheries, and rural development sectors, and on the overall social and economic development of the country. Provide advice on appropriate access fees for both local and foreign fishing vessels. Contribute information on the value of the various resources to the situation analyses for inshore and offshore fisheries. Participate in international access negotiations for fishing rights within the exclusive economic zone (EEZ).	Degree in economics majoring in natural resources or fisheries	principal/chief fisheries economist → director of fisheries policy
Legal officer	Review existing and draft new regulations for inshore and offshore fisheries that support the implementation of measures to ensure the sustainable utilisation of the country's marine resources. Assist in revising relevant acts of parliament as required. Participate in international access or dispute negotiations related to fishing rights and illegal, unreported and unregulated fishing within the EEZ.	Degree in law, majoring in law of the sea	principal / chief fisheries legal officer → director of fisheries policy
Monitoring, control, and surveillance (MCS) or licensing officer	Monitor the activities of local and foreign fishing vessels in the EEZ. Utilise best available information, and the precautionary principle, to determine the optimum number of vessels that should be licensed for each fishery. Provide information as required to regional fisheries organisations.	Degree in computer science, information technology, or equivalent	principal / chief MCS or licensing officer
Fisheries Officer, compliance	The compliance officer may undertake any number of duties, including compliance inspections, investigations, preparation of court briefs, participation in public education initiatives, coordination of enforcement with outside agencies such as maritime police, monitoring of pollution concerns, and assistance in search and rescue activities. All officers must be able to work on both land and sea.	Degree or diploma in fisheries management, or in law and policing	senior compliance officer
Communications / information officer	Prepare and disseminate information on the work of the fisheries institution.	Degree in media, communications, or equivalent	principal communications officer
Fisheries extension officer	Work with communities to assist them to effectively manage their own fishery resources. Facilitate training in community led monitoring of resources, and an integrated approach to ecosystem-based management of community-managed fisheries.	Diploma or degree in fisheries science or management, or a social science degree with an emphasis on community-based management of natural resources	senior fisheries extension officer → principal/chief fisheries extension officer; → director of inshore fisheries
Database officer	Enter and analyse catch data from the various fisheries. Prepare statistical reports for use by MCS, inshore, offshore fishery sections, and regional fishery organisations.	Diploma or degree in computer science or statistics	senior database officer, principal / chief fisheries officer (statistics).
Post harvest specialist	Provide quality control services such as HACCP monitoring, histamine and other testing, to the post-harvest sector, including private sector (fishing companies, processors) and government's responsible certification authorities which accredit premises for exporting to overseas markets.	diploma or degree in food science, microbiology, etc.	senior post harvest fishery officer → private sector → post harvest specialist consultant
Marine conservation officer	Working with government environment service or environmental NGOs, as well as community groups, formulate conservation strategies for marine animals at risk, including marine mammals, reptiles, corals, fishes, invertebrates, etc.	Degree or diploma in environmental science or management, marine biology or ecology	senior marine conservation officer, director of environment unit, CEO of NGO

ANNEX 3

LIST OF PEOPLE CONTACTED IN EACH COUNTRY

Table A-2. (Part.1) Stakeholder contacts in the Solomon Islands, Marshall Islands and Tonga

Solomon Islands	
Name	**Position**
Ministry of Fisheries and Natural Resources	
Ferral Lasi	Deputy Director of Offshore Fisheries, Actg Permanent Secretary
Janet Kibule	Executive Personal Secretary
James Teri	Deputy Director of Inshore Fisheries
Alex Carlos Haikau	Chief Fisheries Officer, Development and Extension
Jessie Kama	Fisheries Officer Extension (but re-allocated to policy)
Ronnelle Panda	Principal Fisheries Officer, extension and development
Melody Fanai	Fisheries Officer (Statistics)
Janet Tahinau	Fisheries Officer (Statistics)
Joseph Sua	Principal Administration Officer
Joseph Atkin	Principal Fisheries Officer Policy
Hubert Odikana	Personnel Officer
Jenny Keniapisia	Statistics and information
Beatrice Misiga	Registry clerk
Lorraine Sam	Fisheries Officer, Surveillance
Sylvester Diake Jnr	Principal Fisheries Officer, Aquaculture
Peter Kenilorea Jnr	Senior Fisheries Officer (Ysabel Province)
George Tavake	Fisheries Officer, Extension
James Ngaerobo	Fisheries Officer, Aquaculture
Willie Abuinao	Senior fisheries officer (enforcement)
Derek Suimae	Senior Fisheries Officer, Surveillance (Observer Coordinator)
James Ngawaerobo	Aquaculture officer
Fred Aleziru	Monitoring, Control and Surveillance
Alan Kirk Asaita	Extension officer
Melinda Naku Djorah	Observer
Forum Fisheries Agency	
Wes Norris	Director, Fisheries Management
Dr Lara Manarangi-Trott	Co-ordinator, Policy Adviser WCPFC
Kaburoro Ruaia	Manager, Treaties Administration
Tim Park	Observers Programme Manager
Ramesh Chand	Manager, Vessel Monitoring System
Hugh Walton	Fisheries Development Adviser
Barbara Hanchard	Project Coordinator, Oceanic Fisheries Management Project
Penny Matautia	Manager, Human Resources, Administration and Performance Management

Table A-2. (Part.2) Stakeholder contacts in the Solomon Islands, Marshall Islands and Tonga

Solomon Islands	
Name	**Position**
Others	
William Parairato	Acting Director, USP Campus, Solomon Islands
Starling Daefa	Head, School of Marine & Fisheries Studies
Patrick Dodo	Curriculum Resources Development Unit, Dept of Human Resources Development
Kristina Fidali-Hickie	Curriculum Resources Development Unit, Dept of Human Resources Development
Selu Maezana	Director, National Training Unit
Kirsty Burnett	Aid Manager, NZ High Commission
Eileen Kwalea	Scholarships Officer, NZ High Commission
Eileen Baragamu	WWF Solomon Islands
Yoko Asano	Japan International Cooperation Agency
Janice Spalding	Programme Manager, Commonwealth Secretariat
Willie Atu	The Nature Conservancy
Esther Rimae	The Nature Conservancy
Anne Maree Schwarz	WorldFish
Louisa Hodge-Topa	Fisheries Consultant, Ministry of Fisheries
Mia Ramon	SPC Solomons Island Office
Manedika Longden	Solomon Islands Development Trust
Cynthia Wickham	Trimarine Group, trainee, Noro (Private Sector)
Thomas Dorku	Soltai Cannery, Noro
Freda Roxanne Fekau	Soltai Cannery, Noro
Contacts of local consultant	**Additional sources of information**
Fred Ganate	Permanent Secretary, Ministry of Provincial Govt & Institutional Strengthening
Edward Hiriahanua	Ministry of Provincial Govt & Institutional Strengthening
Leon Hickie	Ministry of Fisheries and Marine Resources
Aleke Meloty	Aquaculture/Ministry of Fisheries and Marine Resources
Patrick Mesia	SILMMA/Ministry of Fisheries and Marine Resources
Agnetha Vave Karamui	Ministry of Environment, Conservation and Meterology
Lysa Wini	Ministry of Environment, Conservation and Meterology
Lorraine Sam	Ministry of Fisheries and Marine Conservation
Jenny Keniapesia	Ministry of Fisheries and Marine Conservation
Gaylyn Puairana Atomea	RAMSI Machinery of Government
Exsley Taloiburi	UNDP Advisor
David Taniveke Boseto	Melanesiangeo
Alphea Hou	Pasifiki
Albertina Kasi	Boral Gas

King George VI High School form 7 science students	
Boys	**Girls**
Norman Miniti – physics, chemistry, maths	Alison Kaua – biology, chemistry, agriculture, maths, English
Jay Kiri – physics, chemistry, maths, English	Barbara Qaqa – biology, chemistry, physics, maths, English
Garreth Haikau – biology, chemistry, maths, English	Concinta Waena – biology, chemistry, maths, English
Billy Meu – biology, chemistry, maths, English	Florence Fiuramo – biology, chemistry, maths, English
Mark T. Rongo – biology, chemistry, maths, English	Emmanuel Otti – biology, physics, chemistry, maths, English

Table A-2. (Part.3) Stakeholder contacts in the Solomon Islands, Marshall Islands and Tonga

Marshall Islands	
Name	**Position**
Marshall Islands Marine Resources Authority (MIMRA)	
Glen Joseph	Executive Director
Sam Lanwi Jnr	Deputy Director Oceanic & Industrial Fisheries
Berry Muller	Chief Oceanic & Industrial Affairs
Florence T. Edwards	Chief Coastal & Community Services
Darren Nakata	Integrated Coastal Marine Resources Manager
Candice Guavis	Senior Fisheries Officer, Coastal and Community Services
Others	
Rebecca Lorennij	Deputy Secretary, Ministry of Research and Development
Wilbur Heine	Secretary, Ministry of Internal Affairs
Wallace Peter	Deputy Secretary, Ministry of Internal Affairs
Deborah Barker-Manase	General Manager, RMI Environmental Protection Authority
Juliet Anitok	Director, Scholarships Office
Marie L. Maddison	Director, National Training Council
Albon Ishoda	Director, Marshall Islands Conservation Society
Daisy Alik-Momotaro	Director, Women United Together in the Marshall Islands
Dr Transform Aqorau	Director, Parties to the Nauru Agreement office
Junji Ishizuka	Resident Representative, Japan International Cooperation Agency Marshall Islands Office
Thomas Jack	Programme Officer, Japanese International Cooperation Agency Marshall Islands Office
Cynthia Bandiola	Manager of Quality Control, Pan Pacific Foods Inc – Loining plant
Romeo Reimers	Administration Officer, Pan Pacific Foods Inc – Loining plant
Dr Irene Taafaki	Director, University of the South Pacific
Tamara Greenstone	Continuing Education Coordinator, University of the South Pacific
Yolanda McKay	Academic Coordinator, University of the South Pacific
Don Hess	Vice President for Academic and Student Affairs, College of the Marshall Islands
Carl S. Hacker	Vice President, College & Community Resource Development, College of the Marshall Islands
Julius Lucky	Aquaculture Extension Agent, College of the Marshall Islands
Focus Groups	
Introduction to Project	Glen Joseph (MIMRA); Len Rodwell (Pacific Islands Forum Fisheries Agency); Lydia Kaminaga (Foreign Affairs); Marie Maddison (Min. of Education); Thomas Kijiner Jnr (Min. of Resources and Development); Wilbur Heine (Internal Affairs); J. Anitok (Scholarships Council)
Fieldwork Feedback	Glen Joseph, Sam Lanwi, Berry Muller, Florence T. Edwards, Candice Guavis (MIMRA); Dr Taafaki and T. Greenstone (USP); R. Lorenjii (Resources and Development); Albon Ishoda (MICS); Thomas Jack (JICA); D. Barker-Manase (RMIEPA); Cynthia Bandiola (PPF); D. Momotaro (Women United Together Marshall Islands); Don Hess and Carl Hacker (CMI), J. Anitok (Scholarships Council)

Table A-2. (Part.4) Stakeholder contacts in the Solomon Islands, Marshall Islands and Tonga

Tonga	
Name	**Position**
Fisheries Division	
Dr Sione Vailala Matoto	Director of Fisheries
Ana F. Taholo	Head of IT and MCS, Tonga Fisheries Division (by email, as overseas on United Nations-Nippon Foundation fellowship
Siola'a Malimali	Principal Fisheries Officer
Tu'ikolongahau Halafihi	Principal Fisheries Officer
Vilimo Fakalolo	Deputy Secretary
Mele Makasini Tauati	Fisheries Research Officer
Ana Tapu Latu	Senior Fisheries Assistant
Lavinia Vaipuna	Computer programmer
Soesefina Vili	Head of Ha'apai Fisheries
Vilame Moale	Acting Deputy Secretary, Fisheries Division, MAFFF
Silika Ngahe	Head of Vava'u Fisheries
Others	
Leipua Naulala	Scholarship officer, New Zealand High Commission (NZHC)
Dominic Walton-France	Aid Manager, NZHC
Pelenaise Telefoni	Scholarships officer, Min of Education
Lupe Akolo	Editor, Faite magazine
Sione Finikaso	Director, Tonga Trust
Pau Likiliki	Fishing Industry Association of Tonga
Natalima Tupou	Pacific Islands Tuna Industry Association
Lupe Matoto	Ministry of Environment
Meleana T. Pole	Public relations, Ministry of Tourism
Sule Moungaafi	Banner operator, USP
Seleki Manu	Principal, Maritime training institute
Sione Lolohea	Chief statistician
Ofa Masila	Chief Executive Officer, Women's Division
Liuaki Fusitu'a	Principal, Tonga Institute of Higher Education
Lilian Tuihalamaka	Head, Education Information & Data Management Unit
Saia Misinale	Desk Officer for Fisheries, Public Service Commission
Sisiuno Helu	Director, Atenisi Institute
Keasa Pongi	Programme manager, Civil Society Forum of Tonga
Lopeti Faka'osi	Global Environment Facility, Small Grants Programme Focal Point, Civil Society Forum of Tonga
Teresa Pahulu	Chief Education Officer, Curriculum Development Unit
Ani Tei	Head of science, Tonga High School
Siua Nikua	Biology teacher, Tonga High School
Tonga High School students focus group	
Girls	**Boys**
Losana Tongia	Malesiale Latu
Hinenoa 'Altolelei	Sione Folau
Litia 'Ahoafi	Eliesa Ma'u
Fakalelu Ueleni	Patelisio Patelisio
Pisila Taufa'ulungaki	Latu Fotu
Lilika Fonua	

Table A-3. SPC contacts and others

Secretariat of the Pacific Community	
Coastal Fisheries	**FAME**
Lindsay Chapman	Coastal Fisheries Programme Manager
Ian Bertram	Coastal Fisheries Science and Management Adviser
Maria Sapata	Training Attachment, Coastal Fisheries Science and Management Senior Fisheries Officer Fisheries Division Ministry of Agriculture and Fisheries Samoa
Oceanic Fisheries	**FAME**
John Hampton	Oceanic Fisheries Programme Manager
Peter Sharples	Observer and Port Sampler Manager
Sifa Fukofuka	Port Sampling and Observer Trainer
Deirdre Brogan	Fishery Monitoring Supervisor
Gender Section	**HDP (Human Development Programme)**
Aliti Vunisea	Gender Advisor – FSM Office
Brigitte Leduc	Gender Officer
Demography Section	**Statistics for Development Programme**
Andreas Demmke	Population Specialist
Mia Ramon	Regional Co-ordinator, Solomon Islands Office
Other	
Catherine Siota	Turtle Database Officer, Pacific Regional Environment Programme (formerly worked for The Nature Conservancy, Solomon Islands)
Pamela Maru	Chair, Scientific Committee, West and Central Pacific Fisheries Commission
Teuru Tiraa-Passfield	Fisheries intern, Ministry of Marine Resources, Cook Islands

ANNEX 4

COUNTRY DATA

1 SOLOMON ISLANDS

1.1 Fisheries staff

The Ministry of Fisheries and Marine Resources is the agency responsible for fisheries science and management in the country. There are 72 staff working for the Ministry, with an additional 67 observers working periodically to monitor the fishing vessels active in the country's exclusive economic zone (EEZ). Table A-4 gives a summary breakdown of the staff, their gender and their generalised area of work. The various positions and levels of the staff are given in Table A-5.

Table A-4. Summary of staff in the Ministry of Fisheries and Marine Resources, Solomon Islands

	M	F	% F
Total staff	**120**	**19**	**14**
Management	38	5	12
Science/Res	17	2	11
Observers	61	6	9
Admin	3	5	63
Other	1	1	50
Total staff		**139**	

Table A-4 shows that 14% of the total staff are women. However, if the observers are removed (as a category employed on a casual basis, and which would always be expected to be male dominated by nature of the working environment), this becomes 18%. Most of the women employees are in the administration sector, with 63% of total these positions being filled by women. In fisheries science and fisheries management, the two areas that comprise the focus of this study, women comprise 11% and 12% respectively. Fisheries science has only two women staff, both with a BA in Marine Affairs. There are no women in the Ministry with a science degree at the present time.

There are also no women in senior management positions; all the top positions are occupied by men. There are three women at the mid-management level, one of whom is the Personal Secretary to the Minister and the Permanent Secretary for Fisheries and Marine Resources. The other two women at this level occupy technical positions. (See Table A-5 for staff breakdown.)

Owing to the high level of foreign tuna fleet activity in the vicinity, Solomon Islands employs a large number of observers to monitor their activities. There is a total of 67 observers, six of whom are women.

The Ministry of Fisheries has no gender policy but has recently approached SPC for assistance in preparing one (J. Teri, pers. comm.).

Table A-5. Staff levels in the Ministry of Fisheries and Marine Resources, Solomon Islands

Level	Position Title	Male	Female
SS4	Permanent Secretary	1	0
13	Under Secretary Fisheries Tech	1	0
12	Deputy Director Offshore	1	0
12	Human Resources Manager	1	0
12	Deputy Director Inshore	1	0
12	Director of Fisheries	1	0
11	Chief Fisheries Officer	1	0
10	Chief Fisheries Officer (Marketing)	1	0
10	Chief Fisheries Officer	1	0
9	Principal Fisheries Officer (Ref)	1	0
8	Principal Fisheries Officers (Policy, Marketing, VMS, Marine, electrical, license, extension)	14	2
8	Executive Personal Secretary, principal admin officer	1	1
7	Senior Fisheries Officer (Enforce, surveillance, LSE, marine, extension, research)	10	1
6	Principal/ senior fishery officer, Fisheries Officer, (Enforce, industry liaison)	9	4
5	Fisheries Officer (Research Survey)	1	0
5	Senior Fisheries Officer (Training and Technology)	1	0
5	Fisheries Officer, admin officers, accountant officer	7	1
4	Fisheries Officer, typist, clerk	2	2
2	Others (gardener, security, cleaner, driver)	4	2
	Observers	61	6
	Total	**120**	**19**
	Percentage	**86%**	**14%**

1.2 Other areas of employment for marine resource graduates

1.2.1 Provincial offices

Some provincial offices employ fisheries extension officers. There are 16 men in various provinces, and one woman, who is based in Makira. As far as is known, none has a tertiary qualification.

1.2.2 Ministry of Environment, Conservation and Meteorology

A total of 25 staff, 19 men and six women, work in the Environment and Climate Change section of the Ministry of Environment, Conservation and Meteorology. Five of them, including three women with science degrees, are working at the professional level on the marine conservation aspects of the Coral Triangle initiative.

1.2.3 Non-governmental organisations

There are a number of NGOs involved in marine conservation and fisheries. Table B-3 summarises the information collected on their local staffing situation. Overall, the gender balance is much more equitable in NGOs than in the government sector. This is no doubt partly due to gender awareness and policies within these organisations, such as the Gender Equity Plan for WWF (Kalgovas 2002).

Table A-6. Science and management staff gender breakdown, Solomon Islands NGOs

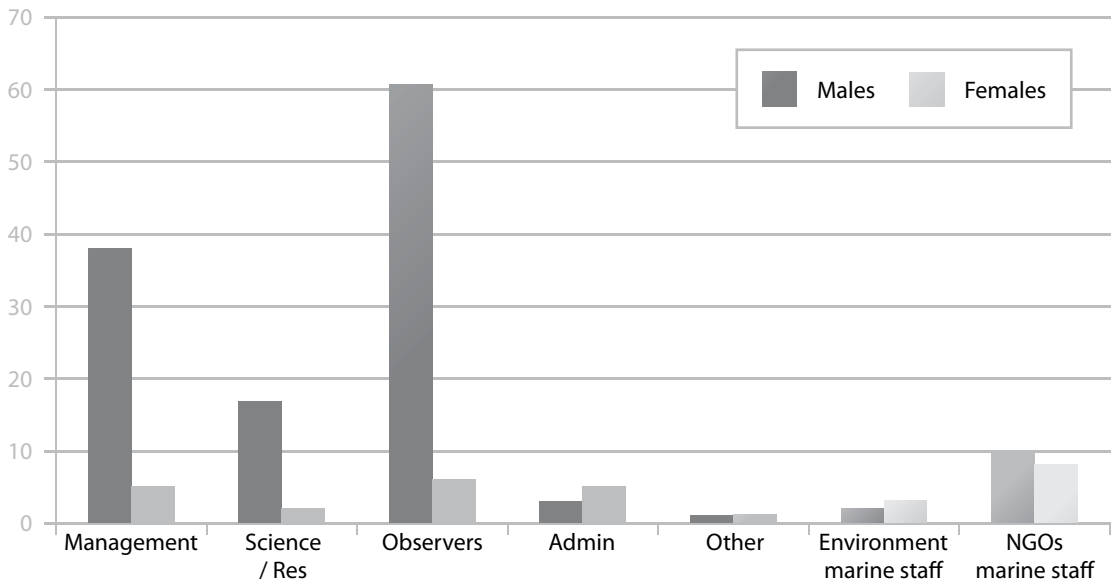
Organisation	Female	Male	% Female
WorldFish	3	3	50
WWF	2	2	50
The Nature Conservancy	2	5	29
Solomon Island Development Trust (SIDT)	1	0	100
Total	**8**	**10**	**44**

1.2.4 Private sector

There are seven Solomon Islanders with science backgrounds working for the tuna cannery, one of whom is a woman. There is also one woman with a science degree working for a private sector tuna fishing company as a trainee.

Figure A-1 shows the staff breakdown across the various institutions involved in fisheries science and management in Solomon Islands.

Figure A-1. Gender breakdown of staff working in the government fisheries institution, as well as marine science staff at government environment institution and NGOs in Solomon Islands



1.3 Education and scholarships

Fewer girls than boys enter secondary school in Solomon Islands. Table A-7 shows the figures for 2005.

Table A-7. Enrolment in Solomon Island schools 2005

2005 Solomon Islands School Statistics				
	Female	**Male**	**Total**	**% Female**
Primary				
Prep	9,345	10,076	**19,421**	**48**
Std 1	7,510	8,433	**15,943**	**47**
Std 2	6,612	7,324	**13,936**	**47**
Std 3	5,912	6,738	**12,650**	**47**
Std 4	5,236	6,082	**11,318**	**46**
Std 5	4,770	5,476	**10,246**	**47**
Std 6	3,980	4,597	**8,577**	**46**
Secondary				
Form 1	2,706	3,261	**5,967**	**45**
Form 2	2,379	2,905	**5,284**	**45**
Form 3	1,954	2,468	**4,422**	**44**
Form 4	1,375	1,927	**3,302**	**42**
Form 5	1,056	1,609	**2,665**	**40**
Form 6	274	458	**732**	**37**
Form 7	37	78	**115**	**32**

Table A-7 shows that, even in the early years, boys outnumber girls in Solomon Island schools. This disparity generally increases in each year of school until, by the final year of secondary school, boys outnumber girls by more than two to one.

Interviews with form 7 students and teachers at one of the main secondary schools in Solomon Islands indicates that this situation remains unchanged in 2010. Progression to senior high school (forms 6 and 7) is based on merit, so this suggests that there are more boys doing better in junior high school and graduating into senior high school.

Reasons given for their being more boys in school include the perception in Solomon Islands society that girls will take charge of domestic duties and it is the man who will be the breadwinner of the family, and therefore more in need of a good education. Therefore, families do not make it a priority for their daughters to attend school regularly, and so they do not have the opportunity to perform as well as the boys.

This in turn results in more young men going on to university. From 2003 to 2011, 70% of the 317 marine and environment-related scholarships listed on the National Training Unit's database in Solomon Islands have gone to men. Narrowing the field down to just marine science, marine affairs and fisheries, information from the National Training Unit shows that 104 men and 48 women have been awarded scholarships since 2003. Of those, three women's scholarships have been terminated. Of the remaining, as of August 2010, ten women have completed, with the remaining 35 listed as active status. Of the 105 men, there have been ten terminations and six deferrals. Eighteen have completed, and the remaining 70 are listed as active.

Despite the fact that approximately one third of all university graduates in marine science and management are women, this ratio is not maintained in the proportion of women graduates in the fisheries ministry. There are approximately eight times the number of men as women in the areas of fisheries management and science.

1.4 Barriers to women participation

1.4.1 Perceptions

The biggest obstacle to increasing the participation of women in fisheries science and management is the same as that which obstructs them from many roles within Solomon Islands' work force. This is society's (including the women's) perception of the different roles and functions of men and women in society. This perception includes the role of women as being responsible for childcare, home gardening and domestic duties.

This has a negative impact on women's participation in education as, even from an early age, girls are kept at home to a greater extent than boys, who are seen as the primary income earners of the household.

1.4.2 Other barriers

The current freeze on public service employment is also a significant barrier in the short term. The latest information from the National Training Unit presented above shows there are 70 men and 35 women tertiary students in marine resource related courses. Where are these Solomon Islanders going to find employment when they graduate?

2 MARSHALL ISLANDS

2.1 Marshall Islands Marine Resources Authority staff

The management and development of marine resources in the Republic of the Marshall Islands (RMI) is the responsibility of the Marshall Islands Marine Resources Authority (MIMRA). Table A-8 provides information about the staffing at MIMRA. More detail is provided in Table A-9.

Table A-8. MIMRA staff

MIMRA			
	M	**F**	**% F**
Total staff	**92**	**14**	**13**
Management	13	7	35
Science/Res	8	2	20
Observers	33	0	0
Admin	0	3	100
Other	38	2	5
Total staff		**106**	

There is a total of 106 staff, which includes the decision-making authority, the Board of Directors (comprised of four men and two women). This figure excludes the two women currently on study leave (see below under Scholarships).

The table shows that 13% of the staff are women. In the area of fisheries management, women comprise 35% and in science/research they comprise 20%. There are no female observers on board vessels, but the observer coordinator is a woman and she is included under fisheries management. Women hold all of the administration/secretarial positions. Under "other" are those in fisheries development (fish market and fish base) and nautical training.

It is important to note that there are two women in positions of responsibility at the senior middle management level (one is the Chief of Oceanic and Industrial Affairs and the other is the Chief of Inshore Coastal and Community Services). Both women have BSc degrees in marine science (one from the University of Rhode Island and the other from James Cook University, Australia). Another woman in the inshore fisheries section has a BSc degree in marine science (from Hawaii). Two of these women are currently enrolled in a statistics certificate course with USP, and the other woman has hopes to pursue postgraduate studies.

Table A-9. A breakdown of staff of MIMRA

Lvl	Position Title	Male	Female
1	Board of Directors	4	2
2	Executive Director	1	0
3	Deputy Director – Offshore, Oceanic and Industrial Affairs	1	0
	Deputy Director – Inshore, Coastal and Community Services	1	0
	Legal Advisor	1	0
	Fisheries and Nautical Training, Centre Principal	1	0
4	Chief – Offshore , Oceanic and Industrial Affairs	0	1
	Chief – Inshore, Coastal and Community Services	0	1
5	Assistant Chief – Market and Operations (inshore)	1	0
6	Offshore: Observer Coordinator	0	1
	Offshore: Observer Assistant Coordinator	1	0
	Aquaculture officers	1	1
	Fish Base Managers/Assistant Manager	12	0
7	Licensing Assistant	1	0
	Data Specialist	1	0
	Observers/Port Samplers	33	0
	Policy, Planning and Statistics	3	3
	Market Operations	4	2
	Aquaculture	6	0
3	Executive Secretary	0	1
4	FNTC Secretary	0	1
8	Repairs and Maintenance	3	0
8	Fish Base (accounts, crew, mechanic, engineer)	17	1
	Total	**92**	**14**
	Percentage	**87%**	**13%**

MIMRA has no gender policy but the environment is very supportive of women in fisheries in general, and of women in fisheries science and management. With the support of the Executive and Deputy Directors, the two level 4 chiefs are in charge of a mostly male staff for all coastal and oceanic work.

2.2 Other areas of employment for marine resource graduates

2.2.1 Republic of the Marshall Islands Environmental Protection Authority (RMIEPA)

This is an independent statutory authority with the responsibility of looking after the natural environment of Marshall Islands. The areas of work are public health and safety, solid waste, organic pollutants, integrated water resource management, land and coastal management, conservation and water quality.

Table A-10. Republic of Marshall Islands Environment Protection Authority staff

RMIEPA			
	M	**F**	**% F**
Total staff	**19**	**7**	**27**
Management	12	3	20
Science/Res	4	1	20
General Manager	0	1	100
Board of Directors	3	2	40
Total staff		**26**	

RMIEPA has a total of 26 staff, of whom 19 are men and seven are women. The decision making authority is the Board of the Directors which has two women and three men as members. The General Manager, responsible for the work of the Authority, is a woman (with a BA in environment and management). In terms of environmental management there is one woman in integrated water resource management and two in land and coastal management. In science/research there is one woman working in the laboratory testing water quality (TableA-10).

2.2.2 Non- governmental organisations

There is only one registered NGO and that is the Marshall Islands Conservation Society (MICS). The Society works in collaboration with MIMRA and RMIEPA in helping the Marshallese manage and protect their atoll environments and use their resources sustainably.

The MICS has 15 staff, including two men and three women on the Board of Directors. The Executive Director is a man (a former MIMRA officer) responsible for managing the Society's projects: four thematic programmes (terrestrial, marine, education and awareness, and administration). Of the seven technical positions, one is held by a woman. The women are instead found working in education and awareness, and administration.

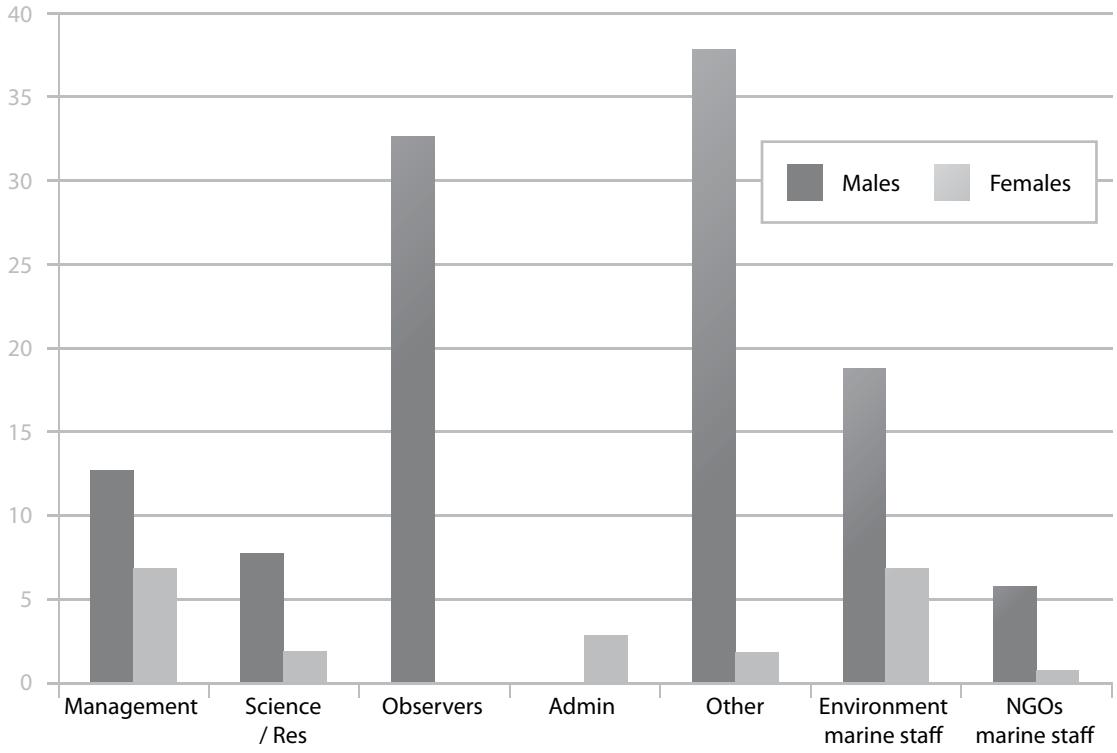
Table A-11 shows the staff breakdown.

Table A-11. Marshall Islands Conservation Society staff breakdown

MICS			
	M	**F**	**% F**
Total staff	**9**	**6**	**40**
Management	3	0	0
Science/Res	3	1	25
Admin/other	0	2	100
Exec Director	1	0	0
Board of Directors	2	3	60
Total staff		**15**	

Figure A-2 shows the staff breakdown across the various institutions involved in fisheries science and management in Marshall Islands.

Figure A-2. Gender breakdown of staff working in the government fisheries institution, as well as marine science staff at government environment institution and NGOs in Marshall Islands



2.2.3 The private sector

Pan Pacific Foods Inc. Ltd was chosen to find out the staff breakdown in terms of gender and job tasks. The tuna loining plant has 412 staff, with 65% of the staff being women (Table A-12).

All the management staff (manager, heads of section) are recruited from overseas. There are four Marshallese men and four Marshallese women working in Quality Control and one Marshallese man working in the laboratory. There are two Filipino women are working in Quality Control and another two Filipino women working in the laboratory. In the area of administration there are 11 staff; two Chinese women, one Filipino woman, six Chinese men and two Marshallese men.

Most of the Marshallese women are working in processing (241 out of a total of 267 women staff). Other areas of work are packaging (eight women), and unloading (one woman).

Marshallese men are also working in the pre-cooking team (29), fish meal team (10), processing (36), packaging (36), and unloading (10).

65% of staff are women (mainly Marshallese).

Table A-12. Staff of the Pan Pacific Foods Inc. Tuna Loining Plant, Marshall Islands

Level	Level of Authority & Responsibility	Type of work	Ethnicity	Male	Female
1	Company Manager	Decision making authority	Chinese	1	0
2	Heads of Section	Administration	Chinese	1	0
		Quality Control	Filipino	0	1
		Laboratory	Filipino	0	1
		Unloading	Chinese	1	0
		Grading	Chinese	1	0
		Pre-cooking	Filipino	1	0
		Fish meal	Chinese	1	0
		Processing production line	Filipino	1	0
3	Quality Control team	HAACP, quality testing at all points of production line	Filipino	0	2
			Marshallese	4	4
	Laboratory technicians	Checks histamine levels, Salt content, moisture, water quality, micro analysis of finished product	Filipino	0	2
			Marshallese	1	0
4	Administration staff	Accounting, logistics, freight, sale	Filipino	0	1
			Chinese	6	2
		Human resources	Marshallese	2	0
5	Pre-cooking team		Filipino	1	0
			Marshallese	29	0
	Fish meal team		Chinese	1	0
			Marshallese	10	0
	Processing Production line team	Fish cleaning, cutting fish into loins	Filipino	0	4
			Marshallese	36	241
	Packaging		Filipino	1	0
			Marshallese	36	8
	Unloading team		Chinese	2	0
			Marshallese	9	1
Totals		**Staff total**	**412**	**145**	**267**
Percent male and female				**35%**	**65%**

2.3 Education and scholarships

Education information from Marshall Islands indicates that there are slightly more males than females completing secondary school. Table A-13 provides data from 2005.
In the area of gender equality in primary and secondary education, national statistics show that the RMI is essentially on target. Gross primary and secondary enrolment rates, both public and private, indicate that female to male enrolment ratios are roughly equivalent, with slight variations from year to year.

Issues of gender disparity arise when examining school drop-out/retention rates. At primary and secondary levels, evidence suggests that female drop-out rates appear to be increasing over time compared to male drop-out rates (female completion rates are lower than those for males). The general consensus from public discussions suggests that this is due to the rise in teenage pregnancy rates.

Another reason is the socio-cultural obligations of females needing to be at home to help the parents take care of younger children and to assist in events such as funerals. Having missed school for lengthy periods of time during the school year, many are unable to catch up and so drop out of school.

An additional problem is that there is not enough classroom space to accommodate all primary school-age children.

Table A-13. Marshall Islands school statistics on graduating students, 2005

2005 Solomon Islands School Statistics				
	Female	**Male**	**Total**	**% Female**
Primary				
1st	828	906	**1,734**	**48**
2nd	639	722	**1,361**	**47**
3rd	612	730	**1,342**	**46**
4th	598	617	**1,215**	**49**
5th	643	633	**1,276**	**50**
6th	523	603	**1,126**	**46**
7th	510	562	**1,072**	**48**
8th	559	596	**1,155**	**48**
Secondary				
9th	530	489	**1,019**	**52**
10th	401	426	**827**	**49**
11th	304	319	**623**	**48**
12th	260	289	**549**	**47**

The College of the Marshall Islands and the University of the South Pacific provide tertiary level education. At the College of the Marshall Islands, in the period 2004–2008, female students tended to do better in mathematics and science. Pass rates in that period ranged from 72% to 83% for female students compared to 66% to 76% for male students. In the same period, fewer female students (between 3% and 11%) withdrew from the mathematics and science course than male students (between 8% and 14%).

At the University of the South Pacific extension centre, 85% of female students were successful in science courses in 2002 compared to 81% of male students in the same period.

Scholarships

Table A-14 shows that there is almost perfect equality in the number of scholarships for tertiary education given to males and females from 2000 to 2005. Apart from 2000–2002, when fewer women received scholarships, more women than men received scholarships.

No historical data were available for the 2005–2010 period. However, the Director of Scholarships said that women tend to do better than men in acquiring scholarships. She stated that marine science and maritime studies are priority scholarship areas for Marshall Islands. In 2010–2011 two women were awarded scholarships, with one going to the University of Hawaii State to do a masters in marine science and one going to the University of Hawaii, Hilo to do a bachelor degree in marine biology. No men received scholarships this year.

Table A-14. Tertiary scholarships awarded in Marshall Islands, 2000 to 2005

Year	Male	% Male	Female	% Female	Total
2004-05	63	45	78	55	**141**
2003-04	61	46	73	55	**134**
2002-03	60	44	77	56	**137**
2001-02	69	58	51	43	**120**
2000-01	96	56	75	44	**171**
Total	**349**	**50**	**354**	**50**	**703**

2.4 Barriers to women's participation

According to women working at MIMRA, there are few, if any, barriers preventing women from entering fisheries careers (including science and management). The work environment in government is very positive and both men and women are encouraged to study. Women, rather than men, have taken up this opportunity, which may lead to retention problems. However, to date, the women in the fisheries sector who have studied overseas, have returned to their place of work.

Marshallese women are respected for their ability to multi-task, juggling family with community and work responsibilities. This in itself is a disadvantage because the responsibility for getting the job done tends to fall on a woman's shoulders and this can be seen clearly in government and semi-government. The main barrier in the work place would be a lack of training in such areas as environmental science (including climate change), laboratory science (water quality and laboratory tests on tuna in the processing industry) and HACCP. A lack of information about careers in fisheries in general is another barrier to attracting more women to this field.

3 TONGA

3.1 Tonga's fisheries division staff

Tonga's fishery resources fall under the mandate of the Tongan Fisheries Division of the Ministry of Agriculture and Food, Forests and Fisheries (MAFFF). There is a total of 54 staff: 38 men and 16 women. Table A-15 gives a summary of the staff, their gender, and their generalised area of focus. There are no foreign fishing fleets operating in Tonga, and very few local tuna vessels. Tonga does not, therefore, have the large number of observers that Solomon Islands and RMI have.

Table A-15. Summary of Tonga Fisheries Division staff

Tonga Fisheries			
	M	**F**	**% F**
Total staff	**38**	**16**	**30**
Management	11	6	35
Science/Res	12	1	8
Observers	6	0	0
Admin	8	9	53
Other	1	0	0
Total staff		**54**	

The overall percentage of women on the payroll is nearly 30%. However, similar to Solomon Islands, there are no women at senior management level, with the top five positions being filled by men (Table A-16).

Women managers are in charge of the outer island fisheries offices based at Vava'u and Ha'apai. The public service level for these positions is not particularly high, and these women have no formal tertiary qualification. There is only one woman working in science and research, and she has a marine science degree, whereas there are six men with relevant science degrees. The six women working in management are primarily involved in looking after the Vessel Monitoring Scheme, or working at a supervisory level in the outer islands. One has a BA in economics, one has a BA in accounting and a diploma in information technology, and one has a certificate in seafood technology.

Table A-16. Breakdown of staffing levels in the Tonga Fisheries Division

Level	Position Title	Male	Female
2	Deputy Secretary for Fisheries	2	0
5	Principal Fisheries Officer	2	0
7	Senior Computer Programmer	0	1
9	Principal Fisheries Officer	1	0
9	Computer Operator Grade I	0	1
9	Fisheries Officers	4	2
9	Computer Programmer	0	1
9	Accountant	1	0
9	Technical Officer Grade I	1	1
11	Technical Officer Grade II	4	4
13	Senior Fisheries Assistants	4	1
13	Computer operator grade I	0	1
	Fisheries Assistant	3	1
14	Technical officer grade II	0	1
14	Fisheries Trainee	10	2
	Observers	6	0
	Total	**38**	**16**
	Percentage	**70%**	**30%**

3.2 Other areas of employment for marine resource graduates

3.2.1 Tongan Environment Department

The other government institution that has a role in marine resource management is the Tonga Environment Department, within the Ministry of Environment and Climate Change. They have ten permanent staff (five women, five men) who work in marine and coastal conservation. All but one have tertiary qualifications. There are also three casual workers, one woman with a degree, and two men. Most degrees and diplomas are in the sciences (marine science, coastal management, environmental science) and geography. There are five staff with SCUBA qualifications (two female degree holders), one permanent male (diploma holder) and two daily paid male workers.

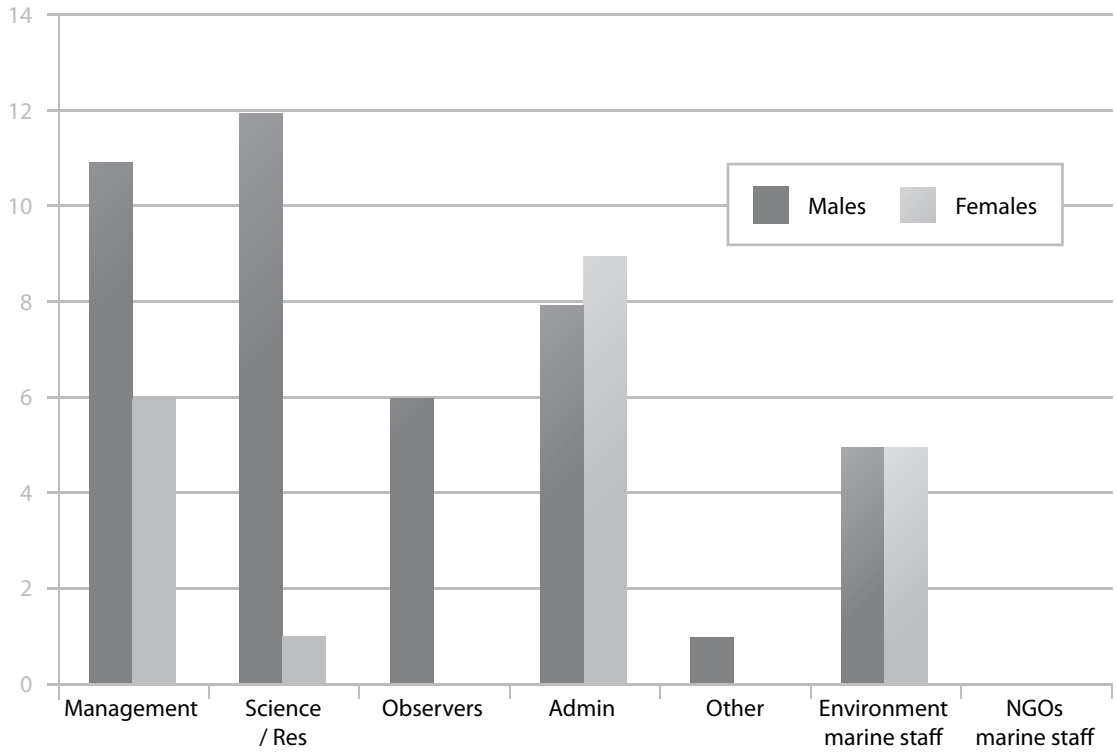
3.2.2 Non-governmental organisations

The only NGO in Tonga involved directly in fisheries management is the Fishing Industry Association of Tonga. This organisation has two staff, the CEO, who is a woman, and a male programme officer. Only the man has a formal tertiary qualification. The Tonga Trust also occasionally runs marine conservation projects, with external partners. They have no staff with marine resource qualifications. The Civil Society Forum of Tonga is the focal point for the UNDP/ Global Environment Facility Small Grants fund, and is launching two community-based fisheries management projects in 2011 in conjunction with the Fisheries Division. However, they do not have any personnel with marine resource qualifications.

3.2.3 The private sector

The private sector in Tonga is not particularly active. Figure A-3 shows the staff breakdown across the various institutions involved in fisheries science and management in Tonga.

Figure A-3. Gender breakdown of staff working in the government fisheries institution, as well as marine science staff at government environment institution and NGOs in Tonga



3.3 Education and scholarships

In direct contrast to Solomon Islands, Tonga has a higher percentage of girls than boys in senior high school. According to the 2006 census, 48% of the 15 to 20 year-old population is female. Despite this slightly lower proportion, the percentage of girls in secondary school is around 51%. At Tonga College, the premier high school in Tonga, where entry is based on merit, 65% of the students are girls. In the senior science classes (e.g. biology, mathematics, physics) girls outnumber boys by between three and five to one. At the Tonga USP campus, 60% of the 109 students doing science subjects are female.

Despite the apparent superiority of girls in the area of science, information from the scholarships officer at the Ministry of Education shows that, although 55% of total scholarships since 2003 have gone to women, only 41% of science scholarships have gone to women. There was only one marine science scholarship during that period, and it went to a woman. The largest proportion (39%) of women chose to do medicine or dentistry, followed by 26% doing information technology/ computing.

3.4 Barriers to women's participation

From the information presented above, it is obvious that education is not a significant barrier to female participation in fisheries science and management in Tonga, though some changes in the way the curriculum is presented may make the sector more attractive. As in Solomon Islands, the main barrier is still people's perceptions. However, in this case it is less about women participating in the professional work force, and more about what sort of professions are appropriate for them.

According to one woman graduate in the fisheries department, fisheries in general in Tonga is perceived as a blue collar career, which means it is not attractive to young people, or their parents. Parents are a major influence on young people's choice of career in Tonga. They push students that show an aptitude for science into the medical and health sector, as this sector is perceived to have a high status. A career in fisheries is low down in the rank of preferred careers for young people. There is a need to raise the image of fishery science and management in general throughout the region, and at the same time make sure it is clear that the sector is equally suited to men and women.

There is no gender policy for the MAFFF. A National Policy on Gender and Development was prepared in August 2001, but there seems to be very little knowledge of this outside the Women's Division. There is, however, a new national policy in place regarding leave; female government employees are now entitled to three months' maternity leave.

Similar to Solomon Islands, in Tonga there is a freeze on employment in the public service, although exemptions can be granted on a case-by-case basis.

There is also the expectation by Tongan society in general that it is the woman who is primarily responsible for the care of the children and the running of the household. This limits the ability of women to, for example, engage in fieldwork or attend meetings that take them away from home for an extended period.

ANNEX 5 MAINSTREAMING RESOURCES

Table A-17 lists key regional and international resources for mainstreaming gender in the fisheries sector, with hyperlinks where available to sector-specific toolkits, manuals, analysis. Many of the links provided here will allow access to additional useful websites containing information and tools useful for gender analysis and mainstreaming. If the links do not work directly from this document, cut and paste the link address directly into your browser (e.g. Internet Explorer, MozillaFirefox, Google Chrome, Safari, etc). Note that this list is not exhaustive but is a good introduction to the topic and a basis for further research.

Table A-17 (Part.1). Internet resources

Title and/or author	Description	Hyperlink or source
Kyprianou, M.-H. (comp.). (2001). Bibliography on gender and fisheries (1990–2001)	Gender and fisheries bibliography	http://www.fao.org/docrep/005/Y1273E/Y1273E00.HTM
Gender Mainstreaming Tools Marketplace Annotated Resources Learning Resource Centre/ OHR/BOM & Gender Unit/ BDP, 2005. UNDP	A comprehensive listing of gender mainstreaming resources with notes on description of tool, access, contact address, publication details and language the resource is produced in. Some of the tools are listed elsewhere in this table. Some of the online addresses are no longer available but mail and/or email contacts are provided for most of the tools.	http://www.pogar.org/publications/gender/tools-marketplace05e.pdf
Gender Analysis Guideline, NZAID 2006	This guideline covers key gender concepts and outlines the methodologies used in gender analysis. The booklet assesses common gender analysis frameworks such as the Harvard Analytical Framework *(best suited to project design)*, Mosers *(static and does not examine change over time)*, Social Relationships *(complicated)*, and Women's Empowerment *(equality strictly hierarchical, with a focus on gender equality but excludes interrelationships between rights and responsibilities)*.	http://nzaidtools.nzaid.govt.nz/activity/programming
Gender mainstreaming in practice. A handbook. UNDP RBEC, 2007. UNDP	This handbook starts with ten steps to integrating gender into the policy-making process, followed by a guide to gender analysis. It is designed to highlight the main issues and links between gender and a specific policy area: poverty; labour; macroeconomics and trade; private sector development; education; health; energy and environment; governance and participation; human rights and justice; science, research and information and communication technologies; crisis prevention and recovery; HIV and Aids.	http://europeandcis.undp.org/home/show/6D8DE77F-F203-1EE9-B2E5652990E8B4B9
Gender manual. A practical guide for development policy makers and practitioners. London: Department for International Development (DFID), Helen Derbyshire. 2008	This manual is divided into three main sections. Section 1: Background ideas and concepts. Section 2: Mainstreaming gender in the policy / programme cycle. Section 3: Tools and guidelines on the processes of gender mainstreaming. This section gives information about statistics and analysis; voice and accountability; policy action and resources; and organisational and individual change.	http://www.dfid.gov.uk/Documents/publications/dfid-gender-manual-2008.pdf
Project cycle management. Technical guide. Rome: FAO, 2001	This guide gives an overview from project cycle to evaluation, and contains several practical case studies.	www.fao.org/sd/seaga/downloads/EN/projecten.pdf

Table A-17 (Part.2). Internet resources

Title and/or author	Description	Hyperlink or source
The Commonwealth Secretariat. Using gender-sensitive indicators. A reference manual for governments and other stakeholders. 1999. Beck, Tony	Contains: Developing a national-level database of gender-sensitive indicators; gathering and using gender-sensitive indicators; the state of the art; good practice case studies in the development of gender-sensitive indicators.	http://www.the-commonwealth.org/shared_asp_files/uploadedfiles/%7BD30AA2D0-B43E-405A-B2F0-BD270BCEFBA3%7D_ugsi_ref.pdf
Guide to Gender Sensitive Indicators, Canadian International Development Agency1997	This Guide explains why gender-sensitive indicators are useful tools for measuring the results of CIDA's development initiatives. It concentrates in particular on projects within end-user focus, and shows how gender-sensitive indicators can and should be used in both gender integrated and WID-specific projects, and in combination with other evaluation techniques. After introducing concepts, the Guide reviews the techniques of choosing and using indicators at the project level, so that CIDA staff can utilise themes an instrument of results-based management.	http://www.acdi-cida.gc.ca/INET/IMAGES.NSF/vLUImages/Policy/$file/WID-GUID-E.pdf
Gender and monitoring. A review of practical experiences. Swiss Agency for Development and Co-operation (SDC), 2001	This report aims to provide a practical tool that can be used to integrate a gender approach into existing monitoring and evaluation mechanisms. This paper first defines M&E, goes on to look at how indicators can be made gender-sensitive, who should be involved in this process, and at which point in the project cycle. Case studies follow the implementation of such approaches at field level (projects and programmes), institutional and government level. The paper concludes with some recommendations and suggestions.	http://www.bridge.ids.ac.uk/reports/re63.pdf
Toolkit. Integrating a gender dimension into monitoring & evaluation of rural development projects. World Bank, 2005	This toolkit from the World Bank contains two parts: Part I: General guidelines for integrating gender in M&E. Part II: Thematic briefs on rural sub-sectors, containing result frameworks and checklists of gender-related issues and activities during the project cycle.	http://siteresources.worldbank.org/INTGENDER/Resources/RuralM_EToolkit2005.pdf
Training package for the promotion of gender equality in NGO development cooperation. Global Finland 2004	This training package provides NGOs engaged in development cooperation with basic information about gender perspective and practical advice on how gender equality can be promoted through NGO projects. With the help of concepts, examples and exercises dealing with gender equality and project cooperation, NGOs are offered basic training that will improve the abilities of their own projects to reduce gender inequalities. The reduction of inequalities through projects also improves the quality and impact of development cooperation.	http://global.finland.fi/gender/ngo/english/
The Oxfam gender training manual. Oxford: Oxfam, 1994. Williams, S, et al.	This extensive manual was one of the first gender training manuals and is still in use. It includes brief explanations of key concepts, tools for gender analysis, analytical frameworks and directions on how to set up a gender-training workshop.	http://tiny.cc/uux9y

Table A-17 (Part.3). Internet resources

Title and/or author	Description	Hyperlink or source
Gender mainstreaming since Beijing. A review of success and limitations in international institutions. Oxfam, 2005. Moser, C.; Moser, A.	This article assesses progress made by international development institutions in gender mainstreaming since the Beijing Platform for Action in 1995. It categorises progress into three stages: Adopting the terminology of gender equality and mainstreaming; putting a gender mainstreaming policy into place; implementing gender mainstreaming in practice.	http://www.oxfam.org.uk/what_we_do/resources/downloads/FOG_MGD_3.pdf
Gender, science and technology gateway	The Gender, Science and Technology Gateway is a resource for researchers, policy makers, and NGOs. It provides key links and information on research, practice, policy and partners in sustainable development, which focuses on gender equality to promote sustainable and equitable science and technology for development.	http://gstgateway.wigsat.org/
Regional Secretariat of the Gender Advisory Board of the United Nations Commission on Science and Technology for Development in South East Asia and the Pacific	The objectives of RESGEST are to enhance the status and role of women, both as agents and beneficiaries in the development of Science &Technology in Southeast Asia and the Pacific region. The seven key areas for transformative action are: • gender equity in science and technology education; • removing obstacles to women in scientific and technological careers; • making science responsive to the needs of society; • making the science and technology decision-making process more 'gender-aware'; • relating better with 'local knowledge systems; • addressing ethical issues in science and technology; • improving the collection of gender disaggregated data for policy makers.	http://www.resgest.org/index.php
Gender Analysis Toolkit. Queensland Government, Australia	A practical guide to build the public sector's skills around gender mainstreaming. The Toolkit is targeted to all staff, regardless of their seniority level and managerial responsibilities. The content is designed to provide staff with the necessary knowledge to integrate gender issues into their work. The Toolkit contains generic tools that can be adapted by different agencies and draws from the experience of specialists in the field. It contains links to other useful resources.	http://www.women.qld.gov.au/resources/gender-analysis/
Gender Mainstreaming Learning Manual &Information Pack	This Information Pack is intended for use both as a basic resource on gender mainstreaming for the interested reader or for use in a training setting. It has been developed to reflect UNDP's needs in particular, especially those of gender focal points in UNDP country offices, but we hope that it will have wider utility. It has been designed to be readily adaptable to different needs.	www.undp.org/women www.undp.org/women/infopack.shtml http://www.undp.org/women/mainstream/
UNDP Gender mainstreaming handbook	This handbook is designed specifically for policy-makers who are not experts in gender issues, but who nonetheless are charged with the day-to-day responsibility of gender mainstreaming, according to organisational mandates. This handbook is meant to guide these professionals in their work.	www.undp.org/women/docs/RBEC_GM_manual.pdf

Table A-17 (Part.4). Internet resources

Title and/or author	Description	Hyperlink or source
Gender Training Kit, UNDP	Generic modules to organise and coordinate gender awareness and gender analysis training sessions for country offices.	www.undp.org/women/docs/GenderAnalysisTrain-Module.pdf
Guide to Gender Sensitive Indicators, Canadian International Development Agency (CIDA)	Produced for CIDA staff, and useful to explain why gender-sensitive indicators are useful tools for measuring the results of development initiatives. It concentrates in particular on projects with an end-user focus, and shows how gender-sensitive indicators can and should be used in both gender integrated and WID-specific projects, and in combination with other evaluation techniques.	www.acdi-cida.gc.ca/inet/images.nsf/vLUImages/Policy/$file/WID-GUID-E.pdf
ILO and South-East Asia and the Pacific Multidisciplinary Advisory Team (SEAPAT) On line Gender Learning and Information Module	This learning and information module on gender has been designed as a tool for learning about gender issues in the world of work, with particular reference to ILO's areas of operation. It includes an introduction to the basic principles and techniques of gender analysis and planning simple operational tools to assist in mainstreaming gender concerns into your work.	http://www.ilo.org/public/english/region/asro/mdt-manila/training/homepage/mainmenu.htm
Women Watch	The United Nations Inter-Agency Network on Women and Gender Equality.	http://www.un.org/womenwatch/directory/gender_mainstreaming_10314.htm
Fisheries and aquaculture in coastal zones. L. Aguilar	This is a fact sheet with useful information about the representation of women in the fisheries sector. It includes useful links to additional relevant information.	http://generoyambiente.com/arcangel2/documentos/404.pdf
TOOLKIT on mainstreaming gender equality in EC development cooperation	This Toolkit is for European Commission staff. It is expected that the Toolkit will also be used by national partners (government and non-governmental), and other donors, as well as by experts engaged to provide technical assistance in the design and implementation of development programmes.	http://ec.europa.eu/europeaid/sp/gender-toolkit/en/content/toolkit.htm
Gender mainstreaming policy and strategy in Cambodia ADB. 2006	Written by the Cambodia Ministry of Agriculture, Forestry and Fisheries, this manual explains the development of a gender mainstreaming policy, implementation process, and levels of intervention. The manual can help national fisheries departments learn more about mainstreaming in a resource sector.	http://www.adb.org/Documents/Policies/Agriculture-Gender-Policy/Agriculture-Policy-Eng.pdf
Resource Guide. Mainstreaming gender in water management. Gender and Water Alliance and UNDP. 2006	This book is a reference guide, a compilation of documents, papers, books, case studies, tools and toolkits on gender mainstreaming in integrated water resource management. There is a section on gender in fisheries. The case studies are from Africa, Asia and Latin America.	http://www.genderandwater.org/
Science in Society website, European Commission	Women are under-represented in many fields, professions and levels of science and technology in Europe. Addressing this gender imbalance is one of the key policy and research priorities of the Science in Society (SIS) Programme. Gender, science and technology papers available on this site.	http://ec.europa.eu/research/science-society/

ANNEX 6

GENDER MAINSTREAMING TOOLKIT FOR THE FISHERIES SECTOR

Gender mainstreaming is the current international approach to advancing gender equality and equity in society. At the level of national government, it involves incorporating a gender perspective into all policies, plans, programmes and projects to ensure that these impact on women and men in an equitable way.[29]

What are the steps in the gender mainstreaming process?[30]

The process is similar to steps taken in fisheries assessment work:

1. baseline study
2. analysis of data
3. action plan
4. monitoring
5. evaluation

What tools are needed?

Checklists, frameworks, action plans and indicators are the main tools for mainstreaming.[31] Several development agencies have produced guidelines for implementing gender mainstreaming programmes. However, few have created any specifically for fisheries, and none for Pacific Islands fisheries.

In this Toolkit are *sample tools* developed by the consultants. Please note that these tools have not been tested in-country and are provided only as an introduction to gender analysis. The proper use and application of gender analysis tools requires training. A website database of resources and the reference list is provided as background reading for those wanting to learn more about gender mainstreaming (Annex 5).

This kit is for non-experts in national and regional fisheries sectors to assist them in gender mainstreaming.

Gender analysis – Creating a checklist

For the most part, practical gender mainstreaming is about running through a checklist of questions to ensure you have not overlooked anything. It is about asking the right questions so that you can see where limited resources should best be diverted. Gender mainstreaming is a necessary process for achieving gender equality in the most effective and efficient manner.

[29] Source: Commonwealth Secretariat 2001 Gender mainstreaming in agriculture and rural development – A reference manual for governments and other stakeholders. United Kingdom.

[30] The United Nations Development Programme, UNDP (2007) has produced two gender mainstreaming manuals for use by those interested in learning more about the process. The manuals provide a step-by-step description of the gender mainstreaming process, together with tools. Unfortunately the books do not have tools specifically for the fisheries sector.

[31] NZAID 2006. *Gender Analysis Guideline* critiques common gender analysis frameworks such as the Harvard Analytical Framework, Mosers, Social Relationships, and Women's Empowerment. A gender expert with experience in Pacific Islands fisheries would be able to advise on which framework to use at the national level.

Table A-18. Checklist of questions

Information required	Reason
Part I - Determining whether there is a need	
What are the national needs in fisheries science and management in government, NGOs, the private sector and academia?	To determine whether or not there is a need. It would identify where and what the need is (training in postharvest techniques to fill jobs in the private sector, aquaculture scholarships for fish farming projects, etc.).
What are the future projected needs?	Forward planning will reduce bottlenecks. For example, where graduates cannot find jobs due to a freeze on job recruitment, the government, the private sector and NGOs could work together to provide support. *If there is a need for more scientists and managers, move on to Part II.*
Part II - Baseline survey questions	
What is the number of girls and boys enrolled at each stage of school?	If one possible reason for there being fewer females than males in science and management is that fewer girls progress through school to university entrance level, this information would identify at which stage this was occurring, and possible solutions could be investigated.
What is the number of girls who undertake subjects such as biology, chemistry, etc. that would be a pre-requisite for undertaking tertiary education in fisheries science and management?	This would determine whether the reason fewer women than men are in fisheries is that they are not taking the right subjects at school. Possible solutions could then be found.
What sort of gender sensitive career information is provided to senior level students who are undertaking science subjects and mathematics at high school?	This would determine whether there are other sectors that are doing a better job at enticing young people, particularly women, into their sector.
What is the perception of a career in fisheries or marine conservation by young people in general, and females in particular?	This would determine whether the sector needs to be made more attractive to prospective students, and in particular females.
What are the employment policies that support women in the work place (gender policy)? If they exist, what efforts are made to ensure that everyone is aware of the policy?	This would determine whether women were discouraged from entering the sector due to a lack of equal opportunity in recruitment, career promotion, access to resources and opportunities, consideration for their multiple roles as the bearers and nurturers of children as well as professionals (e.g. adequate maternity leave, child-friendly work environment etc) and a safe work environment.
Are there any salary disparities between men and women with equivalent qualifications working in similar positions?	This would discourage women from competing with men for the same position.
Are adequate and appropriate conditions available for women to work in the field, e.g. secure accommodation for out-posted staff, toilet facilities on boats, etc.?	Unless a female employee is happy to rough it with the men, conditions such as these are a necessity for female staff to work away from urban centres and on research boat trips.
Is there a gender policy in force in the institution, and are all staff aware of the policy?	Some staff are not aware that their behaviour is considered inappropriate. A gender policy, with training sessions on its implications, would ensure that all staff are aware that they need to meet certain standards of decency.
Do women participate in preparing job descriptions and are they included in selection and interview panels for potential recruits for positions?	This would ensure that a gender perspective is included in selecting suitable candidates for positions in fisheries science and management.

Guidelines for gender mainstreaming in the fisheries sector

This contribution is not intended as a rigid template but is provided as an inventory of guidelines that may be of assistance to fisheries departments interested in mainstreaming gender into their work.[32]

Any attempt at trying to increase the participation of women in fisheries science and management begins with promoting gender equity in the fisheries sector.

1 Ensure that fisheries policies and programmes are sensitive to gender differences in roles and activities.

1.1 In fisheries policy statements, explicitly mention strategies for enhancing women's participation, productivity and access to resources, inputs, support services and market outlets, and clarify that the term fishing refers to both fishermen and fisherwomen.

1.2 Ensure that all statistical data is sex-disaggregated, reflecting women's and men's participation and changing roles in the various aspects of fisheries.

1.3 Ensure that budget allocations to the fisheries sector specify unambiguously the percentage of funding that should be used to address the specific needs of women in fisheries, and spell out the strategies through which the resources will reach them.

1.4 Set targets for women's participation in the planning, implementing and evaluation stages of all the programmes and projects of the ministry of fisheries.

1.5 Aim to encourage projects that are profitable and based on marketing a product that is in demand.

2 Ensure that fisheries research and extension programmes are gender-sensitive.

2.1 Encourage governments, NGOs, the private sector and academic institutions to recruit talented female workers and provide them with the necessary resources.

2.2 Employ a participatory approach to training so that fisheries staff, researchers and extension officers can play their respective roles, utilise their expertise and voice their needs.

2.3 Redesign the training curriculum of extension workers to include awareness building concerning the role of women in fisheries and in community-based fisheries.

2.4 Set targets for the participation of women involved in fisheries activities in extension activities, and hold meetings at convenient locations, at times when they can attend and with the provision of child-care facilities.

[32] Based on the work of the Commonwealth Secretariat 2001, United Nations Educational, Scientific and Cultural Organisation (UNESCO) 2010, Lee 2010, Huyer 2010.

2.5 Provide training in gender issues to fisheries staff so that they can prepare gender-sensitive technical innovations appropriate and acceptable to women.

2.6 Work with leaders at the community level to illustrate how increasing the value of women's fisheries-based economic activity is of benefit to everyone, and encourage women to participate in community decision making.

2.7 Encourage the emergence of self-help groups such as associations or networks which can actively promote issues, including women's concerns, and influence government and NGO activities.

2.8 Work closely with NGOs to disseminate technical messages, new knowledge and appropriate technologies to fishing communities.

Guidelines for promoting equity in fisheries science and management

1 Education as a foundation for a career in fisheries science/management

1.1 Promote access to formal education, technical and non-formal education as the foundation for encouraging more girls/women to pursue careers in fisheries science and management.

1.2 Develop effective fisheries science and management education programmes that are socio-culturally, economically and environmentally relevant. The aim of study programmes should be to produce national fisheries scientists and managers able to make management decisions based on scientific analysis of resources.

1.3 Enlist positive female role models in the classroom and work place to encourage recruitment and provide mentoring support.[33]

1.4 Change negative gender-stereotypes concerning the perceived suitability of women in fisheries science and management at all levels:

- via the media, which can change negative images to positive images at national, regional and international levels;
- via national education policies through gender sensitive teacher training and educational materials.

1.5 Develop fisheries science and management education programmes that cater to the national needs of the sector.

[33] An online-offline mentoring programme in Korean universities has proven successful between young women scientists and teachers (Lee 2010).

2 Employment guidelines

2.1 Take into account socio-cultural factors, both implicit and explicit, that may disadvantage girls from entering and pursuing a career in fisheries science and management when formulating policies, including how gender may combine with other factors of inequality and leave girls doubly disadvantaged.

2.2 Encourage girls to go into careers in fisheries science and management by developing support structures, including mentoring programmes. Career guidance should encourage girls into these careers, with support from families and communities. Gender sensitive career information should be provided on possible careers.

2.3 Take measures to ensure gender balance in fisheries decision-making structures and institutions. This includes ensuring that the agenda at national, regional and international meetings addresses issues relevant to both women and men.

2.4 Increase the visibility of women who work in fisheries science and management through networks.

2.5 Support networking, leadership training and mentoring for women in fisheries science/management. Interactive websites can be used to promote networking amongst women that extends beyond national boundaries.

3 Partnerships

3.1 Promote partnerships amongst relevant organisations (government, NGOs, private sector, academia) with the purpose of promoting gender equity in fisheries science and management.

4 Funding, monitoring and evaluation

4.1 For any policy and programme to have real impact, a system of support, monitoring and evaluation needs to be put in place on an ongoing basis requiring:

- funding and resource support for gender and fisheries science/management programmes;
- qualitative and quantitative monitoring of implementation, including the collection of sex-disaggregated data on recipients, participants and programme impact.

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