

## Solomon Islands: Western Province situation analysis



# SOLOMON ISLANDS: WESTERN PROVINCE SITUATION ANALYSIS

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# EXECUTIVE SUMMARY

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Aquatic agricultural systems (AAS) are places where farming and fishing in freshwater and/or coastal ecosystems contribute significantly to household income and food security. Globally, the livelihoods of many poor and vulnerable people are dependent on these systems. In recognition of the importance of AAS, the CGIAR Research Program (CRP) is undertaking a new generation of global agricultural research programs on key issues affecting global food security and rural development. The overall goal of the research program is to improve the well-being of people dependent on these systems. Solomon Islands is one of five priority countries in the AAS program, a research program led by WorldFish. In Solomon Islands, the AAS program operates in the Malaita Hub (Malaita Province) and the Western Hub (Western Province). This report is a situation analysis for AAS in Western Province

The analysis summarized in this report is one of several 'scoping' activities facilitated by WorldFish, which examined the landscape of AAS in Western Province and determined the key development challenges faced there. Another component of the process was a rapid scoping trip assessment that visited five rural communities in Kolombangara, North New Georgia and Rendova and the urban center of Noro. The sites visited had not previously been part of WorldFish initiatives. The visits helped the AAS scoping team to better understand development challenges and opportunities for AAS-dependent people living in the province.

The final stage of the scoping process was a stakeholder consultation workshop, which was held in Gizo in November 2013. This workshop brought together a range of stakeholders with responsibility for, and perspectives on, the provincial level development challenges. The province or 'hub'-level consultation workshop took participants through a process where they developed a common vision of success, and identified the opportunities and constraints for reaching the development challenge. This was also an opportunity to validate what had emerged from the rapid scoping trip assessment and to present an initial summary of this situation analysis.

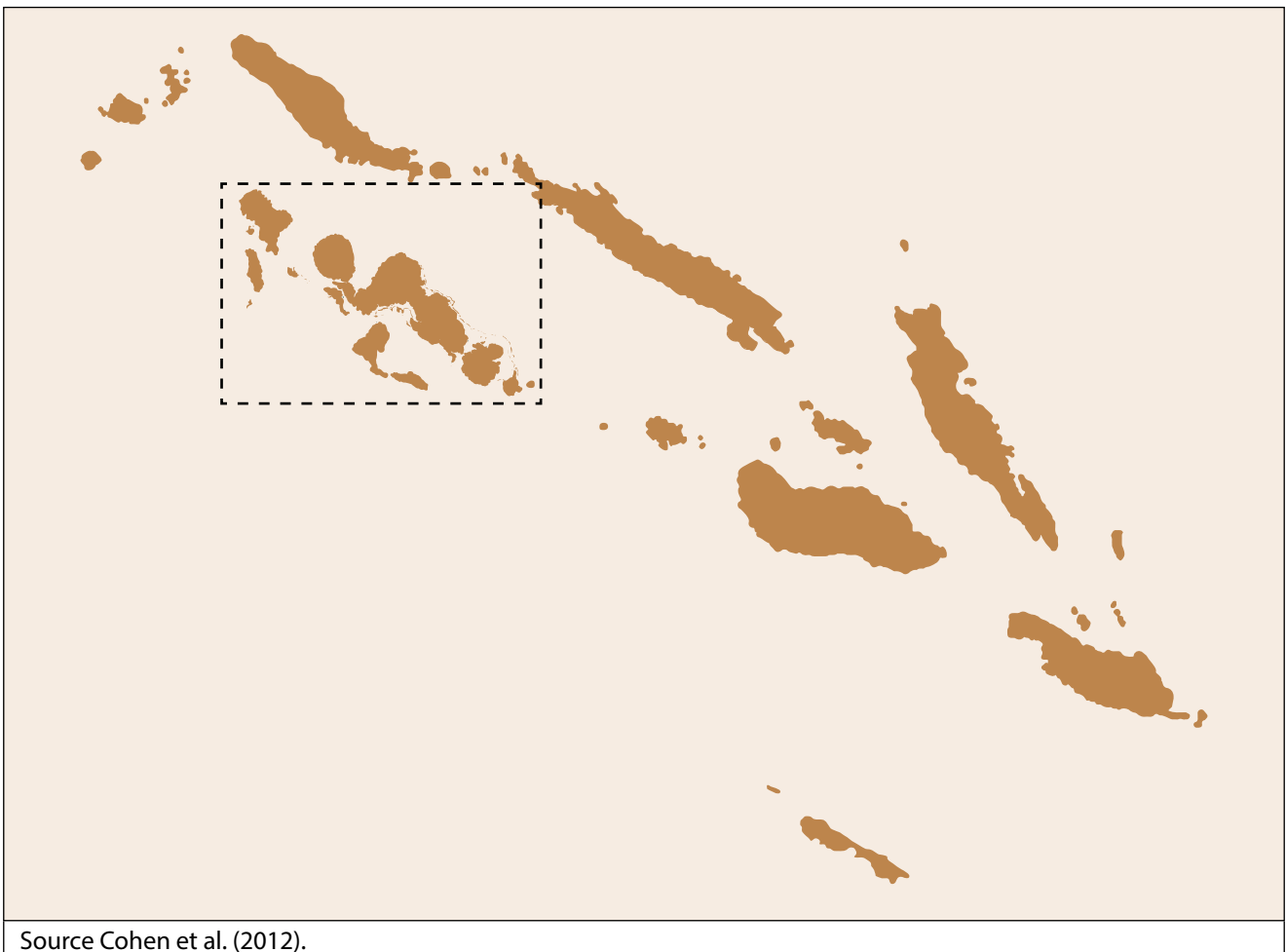
The 2009 population census recorded 76,649 people in the Western Province, making it the second most populous of all the provinces in the country after Malaita. Primary productivity is harnessed through subsistence and artisanal fishing and farming activities, which are a major source of livelihoods and food for the 90% of the population that lives in the rural areas. In recent years, the number of people moving into urban centers such as Noro and Gizo is increasing due to the 'pull' factors of urban centers. Western Province supports major commercial industries including logging, tuna and tourism. These industries bring opportunities for employment, but their impacts are not universally positive or spread equitably across the province. Rural people are vulnerable to external shocks and this can be compounded or ameliorated by the degree of isolation.

This review of the AAS and development situation in Western Province involved collating existing information related to AAS-dependent people in the province. Information sources included: published papers, meetings with stakeholders, project identification, and a review of partner involvement in activities in the province. A summary of present and past activities of AAS within Western Province was compiled from interviews with government and non-government agency representatives. The information summarising past and ongoing project and activities can found in the appendices of this report.

## LOCATION AND TOPOGRAPHY

The Western Province is an archipelago of 11 islands (Figure 1) stretching about 350 km from the Shortland Islands in the north (close to Bougainville in Papua New Guinea) to its southernmost point, the uninhabited volcanic crater emerging from the sea as Mbulo (just north of the Russell Islands of the Central Province). The total land area is 5,500 km<sup>2</sup>, of which 80% is held by customary land owners (Rural Development Division 2001). The remaining 20% of land is alienated land and held by the national government or by

non-Solomon Islanders as perpetual estate (Rural Development Division 2001). The total land area that can be used for agriculture in the Western Province is 118,695 ha, and of this, 71,405 ha is of high suitability, 24,865 ha is of medium suitability and 22,335 ha is of low suitability (Western Provincial Government 2012). A detailed breakdown of available agricultural land per area can be found in the Western Provincial Government's Three-Year Development Plan 2012–2014 (p. 28).



Source Cohen et al. (2012).

**Figure 1.** Map of Solomon Islands showing Western Province in the dashed box

## CULTURE AND LANGUAGE

The province has a rich cultural heritage that forms part of the identity of the local people. There are many cultural groups, most of whom came together in peace barely one hundred years ago. In the province there are 16 major languages spoken (Table 1), with different dialects (Rural Development Division 2001). Most are Austronesian languages, believed to have originated from Southeast Asia about eight thousand years ago (Cox and Mirazón Lahr 2006).

The people of the Western Province can easily identify themselves as a cultural group and at the same time acknowledge their affiliation with their church community (Rural

Development Division 2001). In the province the chief is generally acknowledged to be the head of a tribe and the chiefly title is inherited by the firstborn son (Rural Development Division 2001). However it is also based on the exhibition of certain qualities such as being influential and knowledgeable about customs and having good oratory skills. Where there is no firstborn son, the transfer of title differs from one island to other. Traditionally, chiefs also play an important role in communities and villages in keeping law and order. The chiefly system is vulnerable to the negative effects of the cash economy and external conflicting cultures (Berg 2008).

Name	Alternative name	Region
Alu	Alo	Shortland Islands
Baniata	Lokuru, Mbaniata	South Rendova
Bareke	Mbareke	North Vagunu Island
Bilua	Mbilua, Vella Lavella	Vella Lavella Islands
Duke	Ndughore, Nduke	Kolombangara Island
Fauro		Fauro Island
Ghanongga	Kubokota, Kumbokota	North Rannonga
Hoava		North Marovo
Kiribati		Gizo
Kushage	Kusage	North New Georgia
Lungga		South Rannonga
Marovo		South New Georgia, Vangunu Island, Marovo Lagoon
Roviana	Robiana, Rubiana, Ruviana	Roviana Lagoon, Vonavona Lagoon, North Central New Georgia
Simbo	Madeggusu, Sibbo	Simbo Island
Ughele	Ugele	North Rendova Island
Vagunu		South West Vangunu

Source: Rural Development Division, 2001

**Table 1.** Languages spoken in the different regions of Western Province



The province has a variety of habitats (e.g. from high elevation cloud forests to low lying atolls) and natural assets (e.g. coral reefs, volcanoes and endangered species) which contributes to its relatively high ecological diversity (Green et al. 2006) and positions it as the hub of tourism in Solomon Islands (Solomon Islands Government 2006, 2007b). In particular, the extensive marine areas include relatively pristine coral reefs, mangrove forests and the world's biggest lagoon, which contribute to the province's reputation for scenic beauty and tourist attractions (Kinch et al. 2005; Green et al. 2006). In the relatively well-studied area of Tetepare Island, rare plant and animal species have been identified as vulnerable to loss of habitat, which has helped to protect this area from logging and agricultural activities (World Wide Fund for Nature 2000; Read, Argument and Moseby 2010)

Over the years, however, the environmental conditions on some of the islands in Western Province have deteriorated (World Wide Fund for Nature 2000). Logging and deforestation have caused extensive soil erosion, particularly in the mountainous areas of New Georgia, Rendova, Vagunu, Gatokae, Kolombangara and Vella Lavella. Logging and erosion leaves areas susceptible to landslides and soil infertility, making it difficult to establish agricultural activities (Hviding and Baine 1996; Kinch et al. 2005). Introduced wild pigs are a relatively common problem, which is worsened after the loss of their forest habitat as they move out to forage in agricultural areas, causing damage to plantations (Kabutaulaka 2000). Other land-based threats to natural environments include land clearing (particularly on hills) for shifting cultivation, which speeds up runoff velocity, causing sedimentation, increased water turbidity, flooding and depletion of topsoil (Albert et al. 2008). Increasing demand for houses and firewood has led to depletion of mangrove forest and other trees (Warren-Rhodes et al. 2011).

There is concern about the effect of rising sea levels on some low-lying islands of the province. People on many small islands have observed that areas which were once crop producing are no longer fertile. Water used for

cooking and washing is becoming unsuitable in the small islands, as the levels of salt are too high due to encroaching salt water into the groundwater. Changes in climate including increasing sea surface temperatures and ocean acidification may also have a significant influence on the biology of the reef ecosystems, and on their morphology, structure and abundance (Guinotte and Fabry 2008).

## Climate and natural disasters

The province has an ocean equatorial climate with a mean temperature of 27°C (80°F) with high humidity throughout the year. The coolest period is from June to August, while higher rainfall, averaging between 2900 mm and 3500 mm, is expected from November to April (Rural Development Division 2001). However, seasons are more clearly demarcated by the wind direction which prevails from the west or northwest from November to April. During this period there are long intervals of calm interrupted by storms and strong winds, with threats of cyclonic events that often move south, sparing the province from damage. Trade winds from the southeast blow almost uninterruptedly between May and November. Western Province has a history of being affected by natural disasters (Table 2). Cyclones are infrequent and in the last 50 years only five cyclones have been recorded in the province.

Earthquakes are common; from 1950 to 2010 there were at least 134 potentially damaging earthquakes. Earthquakes are most common in the northern islands of the Shortlands group, which is the most active seismic area in Solomon Islands (Solomon Islands Coastal Marine Resources Consultancy 2002). On 2 April 2007, a major earthquake struck Western Solomon Islands and was followed by a large tsunami which affected Gizo, Simbo, Vella Lavella and the Shortland Islands (Hadden 2007). Fifty-two people died in the tsunami which destroyed more than 1000 homes and left thousands of people homeless (McAdoo, et al. 2009). In Rannonga the shorelines were raised up to 3 m out of the sea, exposing the coral reefs (Fisher et al. 2007; Schwarz et al. 2007). On 5 January 2010, a 7.2 magnitude

earthquake triggered a tsunami which destroyed around 200 homes and displaced one-third of the population on the island of Rendova in the Western Province. No injuries were reported despite a series of earthquakes causing a tsunami wave that was over 3 m high. The province is deemed to be highly vulnerable

to earthquakes and tsunamis, has medium vulnerability to river flooding and has low vulnerability in terms of cyclone, drought and volcanic eruptions (Rural Development Division 2001).

Disasters	Periods 1950–1960	1961–1971	1972–1982	1983–1993	1994–2010	Total
Cyclone	0	4	1	0	0	5
Earthquakes	3	21	43	N/A	67	134
Tsunami	3	0	1	0	2	6
Landslide	0	0	0	0	2	2
Flood	0	0	0	0	6	6
Drought	0	0	0	0	2	2
Volcanic eruption	0	0	0	0	0	0
<b>TOTAL</b>	<b>6</b>	<b>25</b>	<b>45</b>	<b>0</b>	<b>79</b>	<b>155</b>

Source: Rural Development Division, 2001, and the Ministry of Environment Conservation and Planning.

**Table 2.** Summary of natural disaster events in Western Province



In the Western Province, governance is influenced by formal national and provincial level institutions, as well as informal cultural and local institutions that operate at the village, community or clan level.

## Formal provincial level governance institutions

The Western Provincial Government is empowered by the Solomon Islands Constitution and the Provincial Act 1997 to govern the province on behalf of the central government (Lane 2006). The provincial government is located in Gizo, the provincial capital. Western Province is separated into nine constituencies broadly based on geography: North Vella Lavella; South Vella Lavella; Gizo/Kolombangara; Shortland Islands; Simbo/Rannogga; Marovo; North New Georgia; West New Georgia-Vonavona; and South New Georgia-Rendova. A member from each constituency represents Western Province in the national parliament. The province is further divided into a total of 26 wards that are each represented in the provincial government by an elected member on a 4-year term – the full assembly meets twice a year (Rural Development Division 2001). The provincial executive is the ruling or governing structure of the provincial government and consists of 13 of the 26 members. The executive meets twice a month (unless urgent matters arise) to direct provincial government policy and activities, including the use of provincial budgets that are provided by the national government, or from tax and fee revenue collected by the provincial government. All leading positions such as the premier, deputy premier and provincial ministers are filled from the provincial executive. Senior management positions, including the provincial secretary, deputy secretary, treasurer and planner are seconded from the central government to the provincial government, and work closely with the provincial executive by providing technical advice and helping to plan with other ministries to improve service delivery.

In the past 'area councils' represented the provincial government at the village level but these were abolished in the 1990s by the national government as a cost cutting measure. Areas councils have played a significant role in the effective delivery of social services to the villages (United Nations 2002). Currently, the role of service delivery to rural areas is the responsibility of the provincial government, and is intended to be facilitated by 'provincial extension officers'. However, the Western Province's population is dispersed over a vast area where transportation and communication infrastructure are poor (Rural Development Division 2001). In reality, the financial, technical and human resources required to deliver and maintain basic services far exceeds those made available to provincial governments i.e. there is reportedly poor devolution of funds from central government to provincial governments (ADB in Lane 2006). There are a limited number of agricultural and fisheries extension officers throughout the province, and central or provincial regulations (e.g. controls on resource use) are relatively ineffective, except for controls that apply to international exports (Cohen et al. 2013). In addition, provincial governments have little involvement in the many NGO-supported resource management or development efforts. Despite provincial governments being recognised nationally as a key unit for decentralisation of resource management and development in theory (Lane 2006; McDonald 2006) and in policy (e.g. Solomon Islands Government 2009b), their capacity has been prohibitively low.

## Governance at the local village or community level

In Solomon Islands, customary law and tenure of land and coastal areas (particularly reefs and mangrove areas) are recognized in the constitution (International Waters of the Pacific Islands 2003; Lane 2006). At the community level, resource use can be restricted or managed through state legislation (e.g. Fisheries Act); and those who hold tenure have rights to declare who can access those areas and how resources within those areas are used and distributed. Throughout Solomon Islands, customary law and tenure has significant implications for how natural resources are managed and is a key reason that localised approaches to management (e.g. community-based resource management) are preferred. Traditionally in the Western Province, rights to land and coastal areas are passed through matrilineal decent systems (in other areas of Solomon Islands there are patrilineal decent systems). In practice however, women may have limited inclusion in decisions about the use of areas of land and sea, and the resources they hold (e.g. Hviding and Baines 1994; Kile et al. 2000).

At the village level there is a traditional hierarchy of leadership; each tier has a defined responsibility in governing a community or a particular clan. In any one village or community there may be several clans or tribes, each with its own leadership structure and chief. The highest level of leadership belongs to the elected village chief and/or the chief of the locally dominant land-holding tribe (note that the roles can be held by the same person in some cases) (White 2004). For example, in Toumoa, Shortland Islands leadership follows a highly organized structure and important decisions are deferred to the village chief (Boso et al. 2010). Traditionally, in most villages, the village chief plays a very important role in maintaining peace and harmony in his community (Aswani 1997; Hviding 1993). In some areas of Western Province there is another tier of governance i.e. a 'house of chiefs', which comprises of various tribal chiefs spanning a particular island or region. The house of chiefs can be called together to discuss and solve issues around developments or disputes within the villages, many of which are associated with

customary tenure claims (Kile et al. 2000; Berg 2008.). Since the introduction of Christianity into Solomon Islands in the early 1900s, the Church has emerged as an important influence in village governance, running parallel to customary systems (White 2004). Churches can be the focus of community organization (particularly where traditional governance structures are less active), provide much of the 'tempo' of village life, and church leaders provide advice and guidance for individual and village-level decisions (Bennett 2012).

# POPULATION

The most recent population census in 2009 recorded 76,649 people in the Western Province, making it the second most populous of all the provinces in the country (after Malaita). This was equivalent to 13,762 households, with an average of around 6 people per household. The census also estimated that there were approximately 3000 more males than females in the Western Province. About 90% of the population lives in rural areas and largely within 5 km of the coast (Foale et al. 2011). However, the number of people moving into the urban centres such as Noro and Gizo is increasing rapidly due to the ‘pull’ factors of the urban centres (Rural Development Division 2001). The most densely populated villages are located on the islands of New Georgia and Vella Lavella. The most sparsely distributed settlements are scattered in the lagoon areas of Vonavona, Roviana and Marovo.

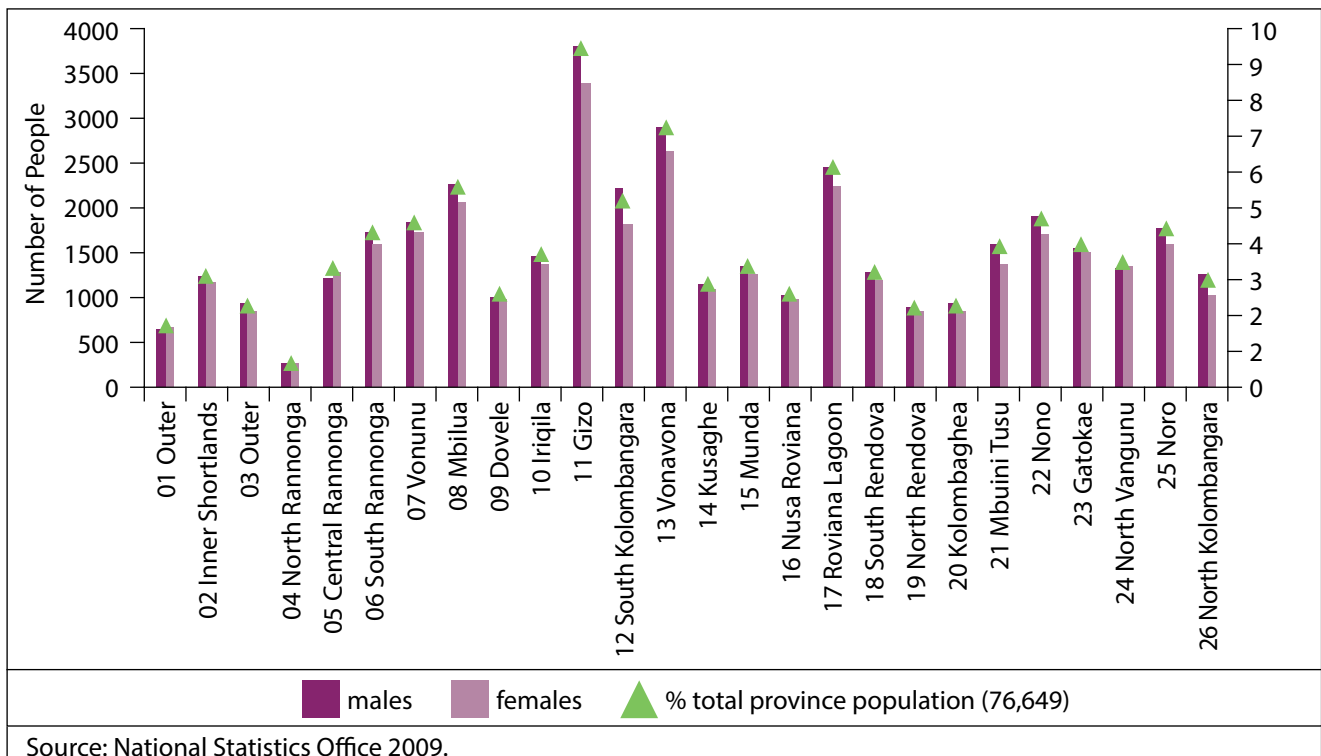
The population increased by an average of 18% between the 1999 and 2009 population censuses (Table 3 and Figure 2) (National Statistics Office 2009) which is lower than the average national annual population growth rate in 2009 of 2.2% (2.1% in 2012) per year (World Bank 2014). The 2009 census report stated that the population growth was 6%

lower than what was predicted in 2005/2006, creating debate among the provincial executive (Western Provincial Government 2012). It is claimed that some households were not counted and some documents were not submitted by enumerators, therefore exact data on population figures remain unknown. It is believed that of the entire population of the Western Province, 40% is under 15 years of age (Western Provincial Government 2012). An average of five babies are born every day in the Gizo hospital alone (personal communication, Dr. Mike Buin, Acting Chief Medical Officer, Gizo Hospital 2010). This means that by 2015, it is expected that 23,000 children will be between the ages of 0 to 7 years. As a result, the provincial government will be required to increase all social services to cater for this very young population.

Population characteristic	1999	2009
Total population	62 739	76 649
Age 0–14	12 547	30 683
Age 15+	50 192	45 966
Male	33 190	39 926
Female	29 549	36 723

Source: National Census 2009, Honiara

**Table 3.** Population of Western Province 2009



**Figure 2.** Male, female and total population of Western Province by ward.

Note: ward numbers are included on the horizontal axis

In 2012, the Western Province had a total of 123 primary schools, 29 community high schools, 5 secondary schools and 6 rural training centers (Western Provincial Government 2012). The education sector faces many challenges in the effective delivery of education services, one of which is that not all children have access to all levels of education (particularly early childhood and secondary school education). This problem is compounded by the dispersed nature of the Western Province, making access to educational institutions difficult. Education services in the Shortland Islands and Gatokae Island are reported to be the most costly due to their remote location (Western Provincial Government 2012). Additionally, there is a deficiency in the financial management across all levels of education institutions (Western Provincial Government 2012).

The Western Province has a high level of poorly trained or untrained teachers, low pass rates in senior levels of education, insufficient supplies of resources to schools, low student literacy and a high student to teacher ratio (45:1) (Ministry of Education 2003). In 2006, a total of 200 teachers taught in community high schools and 61 teachers taught in secondary schools; 76 of the 261 teachers (29%) were untrained (Western Provincial Government 2012). The SIEMS 2008 survey report indicated that 0.7% of teachers in the Western Province held master's degrees, 18.3% held bachelor's degrees, 46% held diplomas and 19% held certificates (Western Provincial Government 2012). The latest census revealed that Western Province has the highest literacy rate of all provinces in the country and despite the constraints mentioned above, the Western Province is well ahead in terms of basic reading, writing and mathematics (National Statistics Office 2009).

### Early childhood education

Early childhood education (ECE) centers are designed for children aged between 3–5 years as an introduction to formal education. There are a total of 17 registered centers in the Western Province which are managed by the Western Education Authority (Western Provincial Government 2012). The Provincial

Education Action Plan 2010–2012 (Western Provincial Government 2012) states that of the 10,701 children aged between 3–5 years, only 2138 were enrolled in early childhood education. There are a significant number of untrained early childhood educators in the province. For instance, according to a survey conducted by SIEMS 2008, of all the early childhood educators in South Vella Lavella, North and South New Georgia, none had formal training (Western Provincial Government 2012). In the Shortland Islands, North Vella Lavella, Gizo, West New Georgia and Marovo, untrained early childhood educators significantly outweigh trained educators. Simbo Island was the only area where all early childhood educators were trained.

### Primary school education

The 2009 census report indicated that 96.3% of children had access to primary school education in the Western Province. It was also reported that the ratio of female to male students was lowest in the Shortland Islands and Marovo constituencies and highest in West New Georgia (Western Provincial Government 2012). The provincial government's target is to reach the Millennium Development Goal of 100% primary school education attendance by 2015 (Western Provincial Government 2012). However, attendance does not appear to be enough, as a concept note produced by AusAid in 2010 reported that only 28.1% of students completing primary school were found to be literate. At the conclusion of primary school, students must sit a national examination called the Solomon Islands Secondary Entrance Examination (SISEE) in order to attend secondary school. The Western Provincial Government (2012) reports that this examination will soon be phased out so that 100% of primary students will have access to formal secondary education.



## Community high school and secondary school education

Community high schools cater for education between Form 1 and Form 3. They are built and managed by communities and are assisted by the church or provincial education authority. National secondary schools are high schools operated by the national government and churches. Within the Western Province, Goldie College on New Georgia Island, Kukundu Adventist High School on Kolombangara Island, Biulah Provincial Secondary School in Roviana, Jones Adventist College and Vonunu Provincial Secondary School on Vella Lavella Island have national secondary school status in the province. The pass rates of students who undertake Form 5 and Form 6 exams are very low. This is attributed to overcrowding in community and secondary schools due to the high number of enrolments of students leaving primary school. As previously discussed, of the 123 primary schools, there are only 29 community high schools and 5 secondary schools. Additionally, it was reported that

dropout rates of secondary school students have increased from 57% in 2006 to 65% in 2008, with fears that this trend will continue (Western Provincial Government 2012).



Photo credit: Anne-Marie Schwarz/WorldFish

Villagers returning from a fishing trip

According to a report from the health department (Western Province Health Division 2009), the province has extended its health services and facilities to most people in the rural areas. This significant achievement is reflected in reports from Gizo hospital analysts that confirm that 95% of the population in the province has access to basic health services (e.g. malaria testing and treatment, referrals) via 60 health facilities consisting of two major hospitals, 24 rural health clinics, 29 nurse aide posts and 5 area health centres (Western Province Health Division 2009). The two hospitals are Hellenia Goldie hospital in Munda under the operation of the United Church and Gizo Hospital which is run by Solomon Islands Government. These hospitals have operating theatres, radiography, pharmacies and basic laboratory facilities. Major health services provided at these facilities are: outpatient clinics, family planning, immunisation and health education. As a result, life expectancy at birth has increased from 55 years in 1989 to 62 years in 2009 (Western Provincial Government 2012). However, the infant mortality rate remains high, with 77 deaths per 1000 births before the age of 1-year old. The most common health problems in the province are malaria, pneumonia and diarrhoea (Western Province Health Division 2009).

The challenges faced by the health departments include: closure of clinics due to infrastructure problems, shortage of nursing staff and medicines, and housing and budgetary limitations (Solomon Islands Government 2007a). Budgetary limitations have restricted the distribution of adequate medicinal supplies and the extent to which medical staff can visit the more remote areas of the province. This has resulted in rural dwellers being forced to pay for travel to Gizo or Munda for medical services (Western Provincial Government 2012).

According to the 2009 census, only 18% of the provincial population have access to safe water sources. Just 19% of the population have access to adequate solid waste disposal facilities and the remaining 81% are reported to use sand, mangroves and the sea (Western

Provincial Government 2012). Further, in some areas of the Western Province, poor sanitation practices and improper solid waste disposal has reportedly caused water contamination and disease (Western Province Health Division 2009).



# REVENUE GENERATION

The major sources of revenue for the Western Provincial Government come from the Solomon Island Government service grant, Provincial Capacity Development Fund (PCDF) and the Ministry of Provincial Government Institutional Strengthening (MPGIS) (Western Provincial Government 2012). The provincial budget for 2013/2014 has increased by 13.4% from the previous financial year totaling SBD22,672,213. It was reported that the revenue received by Western Provincial Government from the national government is 10% higher than any other province because of its relatively higher contribution towards the economic activities of the country (i.e. due to relatively prolific tourism, fisheries processing and logging industries). The Western Province, like other provinces, depends on the national government for revenue to fund education and health services (Table 4).

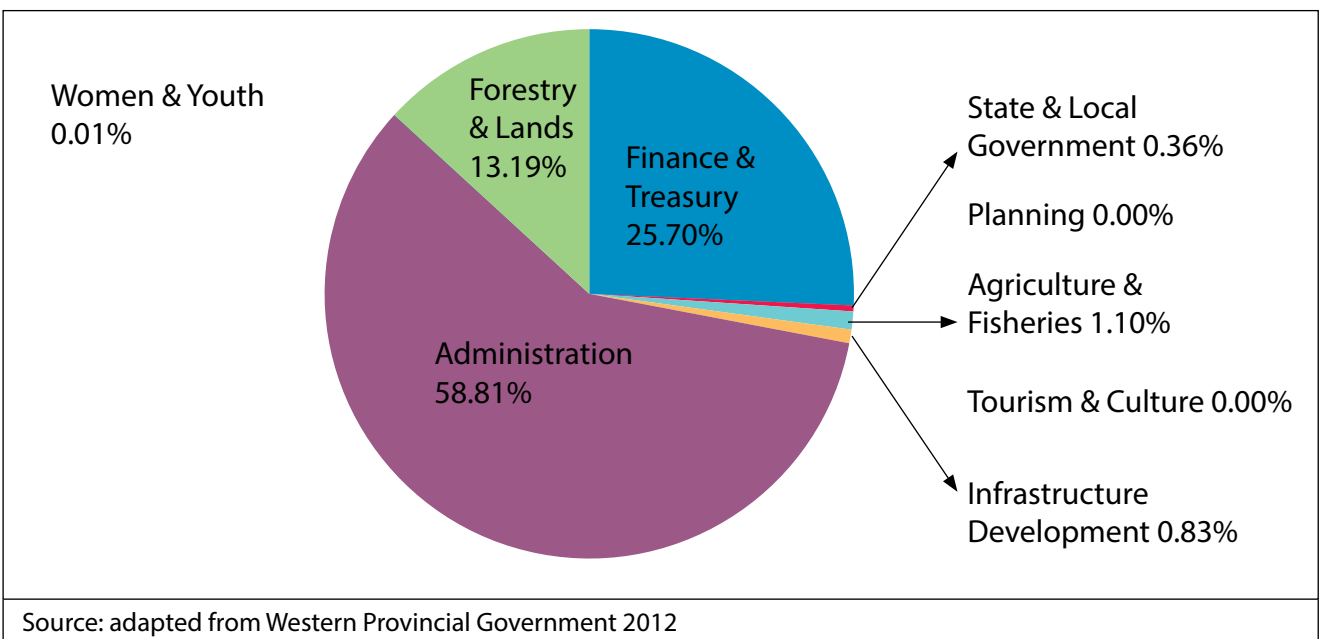
In addition, a significant amount of salaries and wages are paid directly by the national government to teachers, health workers and the police. A conservative estimate for this was SBD 12 million in 2010. This is the largest component of the provincial revenue (personal communication, Mr. George Lilo, Premier of Western Province, 2010).

The largest of locally sourced revenue comes from property taxes, business licenses, and other levies. This revenue is then allocated and distributed across the various divisions within the province (Figure 3).

Type of grant (SBD)	2000	2001	2002	2003	2004
Recurrent services	4,123,060	4,642,834	4,292,080	4,292,080	4,293,000
Education	747,500	657,478	657,470	657,470	658,000
Health	2,531,862	1,993,441	2,214,044	2,568,050	2,569,000
Total	7,402,422	7,293,753	7,163,594	7,517,600	7,520,000

Source: Solomon Islands Government, 2005

**Table 4.** Solomon Islands Government service grant for Western Province



**Figure 3.** Allocation of local revenue by divisions in the 2012/2013 financial year

## SERVICE DELIVERY AND COORDINATION

Small offices or 'substations' at Sehge (Marovo), Lambete (Munda), Vonunu (Vella Lavella), and Korovou (Shortlands) house some staff from provincial departments (e.g. police, agriculture, fisheries) and provide and deliver goods and services to surrounding villages. Nevertheless, the large size and isolation of the catchment areas, and the high costs associated with communication and transportation has restricted the effective delivery of goods and services (Western Provincial Government 2012). Partly due to remoteness, many rural communities are often not consulted on plans and programmes managed by the Gizo-based provincial government, despite these initiatives potentially having a direct impact on them. This is particularly evident as decisions made by the provincial government are generally made by using a top-down approach, which fails to adequately consult with rural communities (Solomon Islands Government 2010).

In the late 1980s, the provincial government established the Western Province Investment Corporation (WPIC) as its commercial arm to assist in providing business and economic services to the province. The total assets of the WPIC were estimated at SBD 15 million in 1997. The assets included a shop, copra crushing mill, 65 houses at Noro, and a plantation at Rendova Harbour. In 2000 the WPIC acquired the *MV Tomoko* as its flagship after the *MV Western Queen* (a passenger boat owned by the WPIC) was washed ashore at Ranadi during a cyclone in 1996. There have been changes in assets since 1997 and a more current estimate of the total annual income of the WPIC is not available. However rental income from houses alone amounted to SBD 900,000 per annum in 2001, the last year for which data is available (Rural Development Division 2001).

Gay (2009) highlighted that at the provincial level, there were growing concerns about lack of coordination and competence of provincial staff, but recently there are some more positive initiatives that are emerging (e.g. Provincial Government Strengthening Program). During 2013, the provincial government undertook a 'profiling' data collection exercise (funded by UNDP) in all the 26 wards. Information

was collected through semi-structured questionnaires carried out in each village in the Western Province (report in preparation). Ward development profiles are anticipated to be important tool for participatory planning processes in provincial governments, helping the government identify potential priority development aspirations common to rural areas or in particular wards. In November 2013 the Western Provincial Government and its partners organized a 3-day provincial consultation, which led to the finalization of the ward profiles and the development of a 5-year provincial strategic plan. The ward profiles and the Provincial Strategic Plan are intended to be guiding tools for development partners in the province to improve the delivery of services at both the provincial and community levels.

Agriculture in Western Province consists of three subsectors: subsistence smallholder farming, commercial farming and large plantations (Gay 2009). The predominantly rural population engage in subsistence agricultural activities which are often combined with cash cropping. The main root crops are: cassava, sweet potato, yams, taro and pana (seasonally). Root crops and vegetables are part of the staple diet and supplement income gained from sale of cash crops such as cocoa and copra (Allen et al. 2006). Copra represent a major cash crop for smallholders in Western Province, with each household selling nearly 7000 tons (t) (approximately USD 533) per year, but price fluctuations significantly affect participation, production and profits, and farmers may cease harvesting and shift to alternatives when prices are low. Irregular shipping services, high transportation costs and low market price are some of the issues affecting copra farmers (Western Provincial Government 2012). Cocoa is grown by small smallholders and supports 1038 households in the Province (Western Provincial Government 2012). Vella Lavella is by far the largest cocoa-growing region in the province, and cocoa farms can be found on Rendova, Gatokae, New Georgia, Kolombangara, Gizo, Simbo and Ranongga. Since 2010, AusAID have funded a cocoa livelihood improvement program (CLIP) for farmers who wish to expand into cocoa development (Western Provincial Government 2012). The Ministry of Agriculture and Livestock (MAL) is also helping cocoa farmers through a cocoa support scheme.

The palm oil industry contributed approximately 14% to national exports in 2010, with further increases in production predicted due to new ownership and management by New Britain Palm Oil Ltd (New Britain Palm Oil Ltd 2011). However, similar to the logging industry, there are issues with the monetary benefits being received by landowners (Maetela 2010). Oil palm plantations in the Western Province are found on Kolombangara and Vangunu, and Marovo Lagoon. Both plantations are considered unsuitable land for palm oil due to their steep slopes. Runoff from the Vangunu plantation flows into the lagoon, threatening marine ecosystems, livelihoods and lucrative ecotourism (Allen et al. 2006). It is argued that

the net economic benefits of oil palm are less than those from traditional and alternative uses of the land (Allen et al. 2006).

In 2013, agricultural projects under the Western Province Department of Agriculture and Livestock (DAL) included: cocoa and coconut, rice farming and small-scale forestry. Funding is administered by Members of Parliament, with staff from the DAL providing the technical expertise and training to connect people to markets and to provide stock and equipment. Agricultural projects undertaken within the Western Province include a women in agriculture project which focuses on vegetable farming; poultry; piggery and ornamental flower production; and a livestock program which helps farmers with honey production, and husbandry of pigs, poultry and ducks. The challenges faced in the implementation of these programs include: inadequate resources to overcome logistical challenges, staff housing problems and lack of office and storage space for equipment (Allen et al. 2006).

The Western Province Department of Agriculture and Livestock (DAL) consists of 10 extension stations, which are located on the 5 main islands in the province (see Table 5), with the main coordination center in Gizo. DAL has 22 officers (5 women and 17 men) and within Western Province agriculture extension division there are 5 quarantine officers, 2 based in Gizo, 2 in Noro and 1 in Munda. As part of the team, the agricultural extension division has one livestock officer, one planning officer based in Gizo and one research officer stationed in Ringgi on Kolombangara Island.

Island	Extension stations
New Georgia	Viru, Olive, Rovana , Munda
Rendova	Ughele
Kolombangara	Iri
Shortland Islands	Korovou
Vella Lavella	Irigilla, Kekoso

**Table 5.** Extension centers of the Department of Agriculture and Livestock (DAL)



In the past ten years, agricultural production has declined due to: a lack of improved production technologies in farming systems; increasing pests and diseases; soil degradation; lack of production incentives; declining export prices; limited market opportunities; limited access to land; and lack of private and public investment in the sector (Solomon Islands Government 2009a). Furthermore the instability in the political and economic environment has hampered the development of the sector such as the lack of development funds from national government reaching provincial levels. With many examples of failed initiatives in public support of rural development over the past decade, the national government has placed rural development at the top of its policy agenda and this includes agriculture in rural

villages (see Solomon Islands Government 2007a). Despite this, the national and provincial governments are attempting to support agricultural growth through activities such as the Agriculture and Trade Show, which was held on 15–22 June 2013 in Gizo, Western Province. The show attracted hundreds of visitors each day. The stalls, information booths and demonstrations were run by the Ministry of Agriculture and Livestock, farmers, community groups, the Ministry of Commerce, the Department of Trade, the Ministry of Forestry and private businesses. The show aimed to boost agriculture awareness, and to give farmers an opportunity to consult with agriculture officers from Honiara.



Men's group discussion

Forest covers approximately 80% of the land base within Solomon Islands and is one of the top ten most threatened forest ecological regions in the world (World Wide Fund for Nature 2005). The Ministry of Forestry and the Solomon Islands Government is responsible for the overall management of forest resources. However, the Solomon Islands forest sector has issues with accountability and transparency, is poorly regulated, and is in need of significant reform (World Wide Fund for Nature 2005). Government departments lack capacity and financial resources to monitor and enforce legislation, which has led to high levels of illegal logging and many regulatory abuses (World Wide Fund for Nature 2005). The logging industry is the single most significant economic sector in Solomon Islands; it contributes 67% of export earnings (UN-REDD Programme 2012), and 20–30% of total government revenue (Critical Ecosystem Partnership Fund 2012).

The Western Province has the highest number of forest areas in the country, and correspondingly has issued the highest number of logging licences totalling 91 operations (Western Provincial Government 2012). According to the Western Provincial Government’s Three-Year Development Plan (2012–2014), of the 551,500ha of forest areas in the Western Province, there are only 71,300 ha remaining, leaving less than 13% unlogged. In 2003, an AusAid forestry inventory suggested that if harvesting rates were maintained, natural forests would be exhausted by 2015 (URS Sustainable Development 2003). This is particularly problematic for the Western Province Government, given that logging contributes to 80% of provincial revenue (Western Provincial Government 2012). The same inventory reported the sustainable harvest level in 2003 was 255,000 m<sup>3</sup>, however in 2004, almost 1 million m<sup>3</sup> of raw logs were exported from Solomon Islands (World Wide Fund for Nature 2005). This was followed by 1.4 million m<sup>3</sup> in 2007 and in 2011 the harvested volume increased to a staggering 1.9 million m<sup>3</sup> (Natural Resources Development Foundation 2014). Logging licences have been issued for nearly 90% of primary forest areas suitable for forest extraction. In areas that have been previously logged, reentry logging has been granted, which has further degraded the environment (World Bank 2007). It is reported

that peak logging was reached in 2011 and future revenue from commercial logging was set to decrease significantly from 2012 onwards.

The under-resourced forestry sector lacks the capacity to monitor and enforce collection of timber related revenue and tax. This has left hundreds of millions of dollars in royalties and timber duties underpaid which could have funded development and infrastructure projects, benefiting a significant percentage of the population (Corrin 2012). The Forest Resources and Timber Regulations (1978) set the maximum basic royalty payment for landowners at 12.5%. However this rate is negotiable between landowners and the logging companies. Table 6 compares the average royalty allocation from logging by different stakeholders. Anecdotal evidence suggests that in places such as Marovo Lagoon, local communities have reported receiving only around 1% in royalties (Vltcheck 2008).

Although logging has brought some money into communities, the net impact is usually divisive as there is little evidence of village improvements and management of funds is not transparent (World Bank 2007). Poor to nonexistent enforcement of forestry regulations has resulted in the majority of landholders being excluded from consent and negotiation arrangements relating to benefit sharing. Decision-makers are often illegitimate landowners or reside outside of customary lands and control the distribution of benefits from timber, creating monetary inequities and fuelling social conflict (Critical Ecosystem Partnership Fund 2012). Additionally, the social issues associated with logging camps are immense, and include alcoholism, child sex abuse and prostitution (Vltchek, 2008).

Stakeholder description	Royalty allocated
Logging contractor	60%
Government	25%
Licensee	10%
Customary landowner	5%

**Table 6.** Average distribution of royalties from timber export (adapted from (Corrin 2012)

## Afforestation and reforestation

Despite the Western Provincial Government's target, "that by 2015 all areas logged must be planted" (Western Provincial Government 2012), there are only few afforestation and reforestation activities in the Western Province. The largest afforestation area in Solomon Islands is an area of 12,000 ha of planted tropical hardwoods on Kolombangara Island in Western Province, and is managed by Kolombangara Forest Products Limited (KFPL). The other plantation is 9,000 ha on Vangunu Island in Marovo Lagoon, managed by Eagon Pacific Plantation Ltd. The Natural Resources Development Foundation (NRDF) currently supports a small reforestation project in the tribal area of Vella Lavella. In all three areas, teak is the main species grown due to its high value and speed of growth. Despite this, it is believed that teak trees will not contribute significantly to rural incomes for 20 years after planting (World Bank 2007).

## Forest conservation

There are a few community-managed forest conservation areas in the Western Province (Table 7). As there are currently no formally registered terrestrial protected areas, conservation efforts are constantly under threat from those pursuing logging agendas. In

addition, a conservation agreement between the communities on Gatokae Island with the University of Queensland has been signed to protect the remaining rain forest areas, and there is community interest to expand this to the unlogged area south of Vangunu (UNESCO 2014). There are also a number of smaller community-managed forest areas throughout the Marovo Lagoon that are supported by the University of Queensland, World Wildlife Fund, Conservation International and the American Museum of Natural History (UNESCO 2014).

## Forest Stewardship Council (FSC) certification

In the Western Province, forest certification has been used as an instrument for minimising negative environmental and social impacts of logging and for maintaining ecosystem services. KFPL, NRDF and Marovo Lagoon Sustainable Timber Ltd are currently the only organizations that produce/market FSC certified timber in the Western Province, with operations on Kolombangara, Leona in Vella Lavella and Kongukolo in Marovo Lagoon. Certified timber generally allows access to regional and international markets at a price up to three times more than what is obtained through current commercial logging activities (Wairiu 2004).

Conservation area	Ha	Supporting/Managing Organization	Organization type
Kolombangara Island (above 400 m)	20,000	Kolombangara Island Biodiversity Conservation Association (KIBCA)	community-based organization comprised of indigenous landholders
Tetepare Island	12,000	Tetepare Descendants Association (TDA)	community-based organization comprised of descendants of indigenous landholders
Barekasi Tribal Area, Vella Lavella	1,200	Natural Resources Development Foundation (NRDF), managed by indigenous landholders	non-governmental organization, conservation area managed by the Barekasi Landowners Association (BLA)

**Table 7.** A summary of the main conservation areas in the Western Province



## Forest related carbon offsets and REDD+

Carbon offsetting as a mechanism for forest conservation has been hardly explored in Solomon Islands. The only operating example in the Western Province is a small voluntary carbon-offset project in Barekasi Tribal Area in Vella Lavella, supported by NRDF through a partnership with Dutch Millennium Foundation (Natural Resources Development Foundation 2014). REDD+ (reducing emissions from deforestation and forest degradation) is an international mechanism designed to use market and financial incentives in order to reduce the emissions of greenhouse gases from deforestation and forest degradation (Corrin 2012). An Initial National Programme Document (INPD) was signed between the Government of Solomon Islands and the UN-REDD Program in May 2011, to support initial readiness for REDD+ and an investment of USD 550,000 has been made to date (UN-REDD Programme 2011). The INP aims to enhance the involvement of stakeholders through the establishment of inclusive REDD+ management processes,

and an intensive education and awareness-raising programme (UN-REDD Programme 2011). The German Agency for International Cooperation (GIZ) and the Secretariat of the Pacific Community (SPC) are supporting Solomon Islands' REDD+ efforts through the Climate Protection through Forest Conservation in Pacific Island Countries project. The main focus of REDD+ projects has been in Choiseul Province and so far the only activity undertaken in the Western Province was a REDD+ feasibility study on Tetepare Island (Stanley 2013). This study revealed that REDD could compete financially with logging revenue allocated to customary landowners, as outlined in Table 8.

Additionally, there are a variety of non-tangible benefits that can be derived from REDD+ projects including, "flood and erosion control, the provision of clean drinking water, maintenance of the forest itself, freshwater, and protection of near-shore marine habitats that provide protein sources in the form of fish, marine invertebrates and game animals" (Stanley 2013, 7).

Mean gross revenue/ha over 9 years from REDD			Logging
Low (US\$ 3)	Medium (US\$ 6)	High (US\$ 9)	US\$/ha
279.78	559.57	839.35	230

**Table 8.** A summary of the main conservation areas in the Western Province

Subsistence and artisanal fishing are a significant source of livelihoods and a major source of dietary protein for rural people in Western Province (Weeratunge et al. 2011; Kruijssen et al. 2013). The 2009 census shows that most households in Western Province market marine products – 54% of households market finfish, 19.8% shellfish, 11.3% crab/lobster, 9.6% sea cucumber and 4.7% market turtle. However, nationally there are concerns that population growth, climate change and market pressures mean that nearshore fisheries will be unable to meet the future demands of Solomon Islanders (Bell et al. 2009; Brewer et al. 2009; Bell, Johnson and Hobday 2011). Yet, because fisheries remain an important source of food and a potential driver of economic development in Western Province there are efforts to enhance:

- the economic profitability and productivity of small-scale fisheries
- the sustainability of both subsistence and commercial harvesting
- marine productivity and profitability through aquaculture

## Developing small-scale fisheries

Marine products that are exported internationally from the province include trochus, crayfish and sharks' fin (Adams et al. 1992). The export of beche-de-mer has, at certain times, been an important source of income for rural communities in Western Province (and indeed nationwide). However, since 2006, extraction and export of sea cucumber has been banned by the Ministry of Fisheries and Marine Resources due to concerns about overfishing (Schwarz et al. 2009).

Gizo is the most significant fish marketing location in Western Province, where the fish sold are predominantly reef fish that have been caught from around Gizo Island, from Vella Lavella, Ranongga, Simbo, Kolombangara and Vonavona, and even reportedly from as far away as Marovo Lagoon and Choiseul. There is little data about volumes of fish being sold through this market, but one study suggested that catch and sale volumes varied substantially between sellers i.e. less than 1000 kg per year up to over

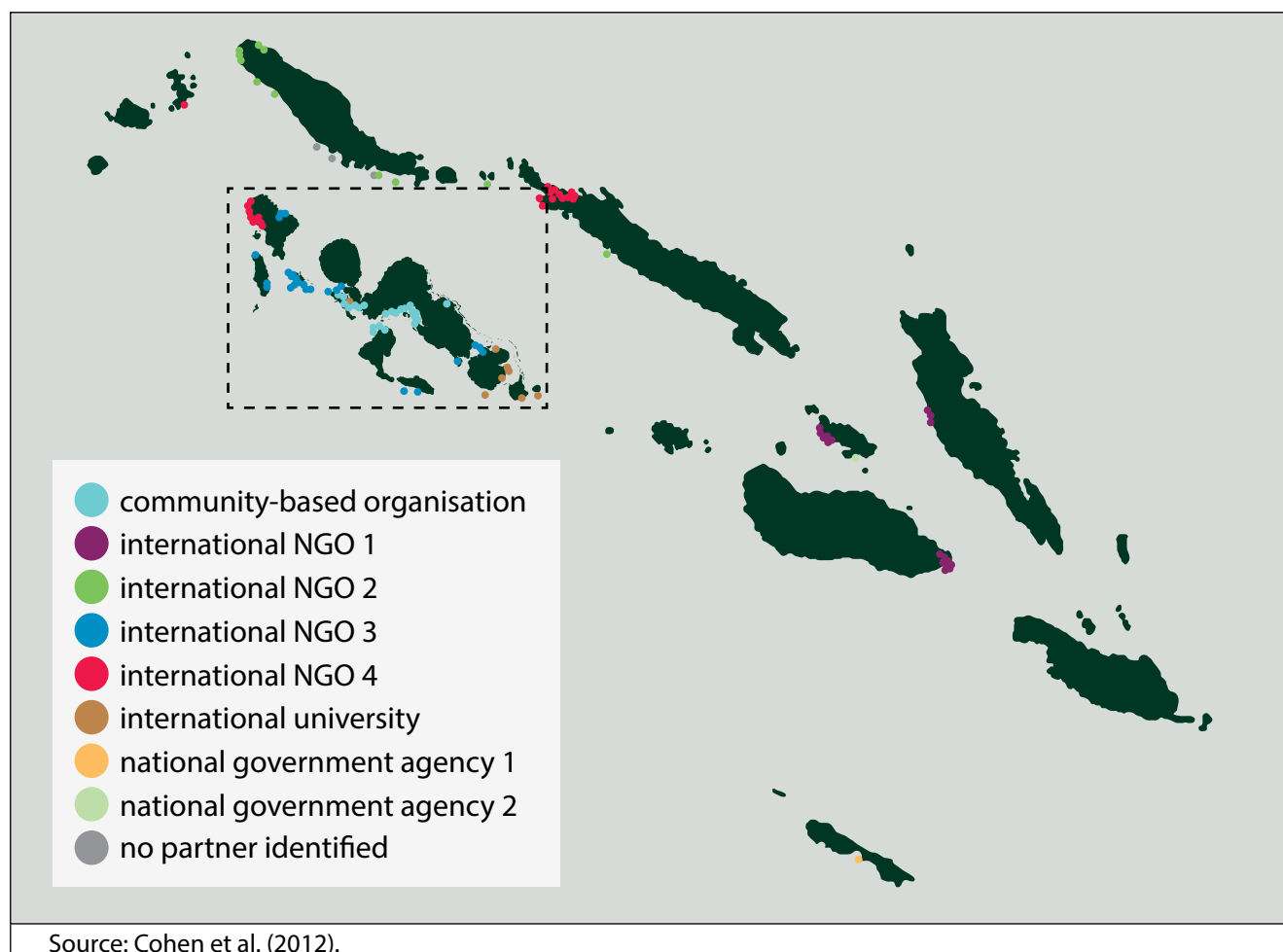
10 t per year (Brewer 2011). To support the development of small-scale commercial fishing and marketing, six fisheries centers have been established with donor funding over the last 10 years. The Gizo and Seghe fisheries centers currently make and sell ice to improve fish storage and transport. The Munda, Dovele, Korovou and Noro fisheries centers have not been operating for the last six years (personal communication, Western Provincial Principal Fisheries). Previous fisheries development initiatives in the province have been impeded by the high costs of transportation and communication, inadequate qualified staff and limited financial and technical support from central government (Oreihaka and Ramohia 2000).

Fish aggregating devices (FADs) are a common tool used to enhance small-scale fishers' ability to access and capture pelagic fish. FADs are also used as a strategy, concurrent with fisheries management efforts, to alleviate fishing pressure from nearshore areas to enhance sustainability. In Western Province, several agencies such as the University of Queensland, WWF and WorldFish have supported the deployment of FADs. One study that included data from Western Province suggested that the FADs had resulted in increased catch per unit effort due to enhanced catches of pelagic fish (Prange et al. 2009). Although it was not empirically tested in this case, it was perceived that since FAD installation, pressure on other fishing locations had decreased. However, the use of FADs is not without challenges. For instance, deployment and construction can be expensive or logistically difficult; they may require maintenance that fishers or communities are unable or unwilling to undertake without assistance; and there have been reports of FAD vandalism and destruction (Albert et al. 2013). Yet, FADs are still noted as an important development strategy considering the limited productivity of coastal areas relative to projected demands (Bell et al. 2009).

## Fisheries management and sustainability

The Western Province has been the focus of a relatively high amount of investment in marine resource management and conservation efforts in Solomon Islands. As a result, the highest concentration of conservation and management partners and local management efforts is found in Western Province (Figure 4), and much of the information about decentralized fisheries management approaches and outcomes emerges from Western Province case studies. The importance of provincial governments in these decentralized fisheries management and development efforts is well recognized (Lane 2006; Govan et al. 2011). However, to date, the role of the provincial government has been limited (a trend that is consistent across Solomon Islands) due to a lack of financial, human and technical capacity (Lane 2006; McDonald 2006), in addition to limited coordination with NGOs and research agencies (Cohen et al. 2012).

In the rural areas of Western Province, NGOs (e.g. WWF) and research agencies (e.g. WorldFish, University of Queensland and University of California) have supported communities to establish local management of marine resources. These approaches generally integrate customary tenure (Aswani 2005), and traditional knowledge and practices (Aswani and Hamilton 2004; Aswani and Lauer 2006), with contemporary scientific knowledge and management practices. An inventory collated by the Solomon Islands, Locally Managed Marine Area Network (SILMMA) reported over 50 locally managed sites in Western Province (SILMMA 2010, unpublished data; Figure 4). The most well documented cases are Tetepare (managed by the Tetepare Desendants Association), Marovo Lagoon (supported by University of Queensland), Roviana Lagoon (managed by the Roviana Conservation Foundation and University of California) and the Jorio region of Vella Lavella (supported by WorldFish) (see Appendix I).



**Figure 4.** The sites of local management supported by conservation and resource management partners (government, NGOs or research agencies), highlighting the concentration of partner engagement and local management efforts in Western Province.

Management initiatives are generally started due to: community concerns about declining resources and deteriorating environmental conditions (Albert et al. 2007; Schwarz and Prange 2009); or in some cases, reports of exceptionally high marine biodiversity, such as Njari Island near Gizo. Management (a combination of a range of tools and approaches) is generally designed to consider a variety of species and habitats that are important for supporting biodiversity, ecosystem function and fisheries productivity. Management is often developed through participatory and collaborative processes, and includes elements of awareness-raising about environmental sustainability concepts (Albert et al. 2010; 2012).

Ultimately, management arrangements (e.g. fishing rules, enforcement measures, clarification of tenure claims) are negotiated and decided (but are designed to be flexible and adaptive) and may be written into management plans. Currently, most management plans are written documents but are relatively informal as they are not reinforced by national or provincial law. The exception is the intention to declare marine protected areas in the Gizo area under the relatively new Protected Areas Act (Martin 2013). This process is being facilitated by WWF; however there is little capacity to process applications or to enforce management once it has been approved.

There are some cases from within the province that report the impacts of management efforts on fisheries resources and on fisheries-associated livelihoods. For example, some studies suggest that management practices (particularly periodically-harvested areas) have resulted in increased abundance and catch rates of harvested invertebrates (Weiant and Aswani 2006; (Cohen and Alexander 2013). Increased abundance of herbivorous fish were observed in marine protected areas established in Marovo Lagoon, which was attributed to the closure of areas to fishing and the change in people's behavior due to education programs (Albert et al. 2010). However, in another case in Vella Lavella, it appeared that several years of management had not improved finfish catches in periodically-harvested areas, due to relatively heavy fishing pressure applied when they were

reopened (Cohen and Alexander 2013). Other studies have suggested that in locations where local management is practiced, nutrition is improved (Weiant and Aswani 2006; Aswani and Furusawa 2007).

Local management is not always successfully maintained. In one case study where management plans had been formed after substantial consultation and advice, two out of five communities used fewer or different management measures to what had been agreed (which may not been less effective in improving sustainability); and in the other three communities, none of the agreed management arrangements were being implemented (Cohen and Foale 2013). This highlights that implementing management to enhance sustainability will continue to be challenging, even where communities are enthusiastic and active about management of their resources. Although there may be a relatively high numbers of communities reported to be practicing management in Western Province, in reality this figure may be less.

To enhance community well-being and to reduce the impacts of lost opportunity for fishing (e.g. due to the implementation of closed areas), resource management initiatives often proceed alongside alternative livelihoods or other developments, with the support of NGO or research partner agencies. For example in Roviana Lagoon, the partner encouraged community commitment to management by establishing alternative livelihood activities, including a women's sewing project and providing payment for community health and education services (Aswani 2000; Aswani and Weiant 2003). Due to the relatively high levels of tourism in Western Province, several projects have examined, or attempted to enhance, the role of tourism that operates alongside marine management efforts i.e. particularly in Marovo Lagoon (Albert et al. 2010), Roviana Lagoon and Tetepare (Stanley 2013). However, it has been observed that tourism or other livelihood projects are not without challenges, and resource management can stall or fail when hopes for improved income do not materialize, and/or if conflict arises due to inequitable distribution of benefits from new livelihood activities (Aswani and Weiant 2003).

## Aquaculture

Aquaculture has been identified as important in helping to reduce the projected shortfall of fish required to meet the needs of the growing population in Solomon Islands (Bell et al. 2009). However, discussion of aquaculture potential and case studies of its use in the country highlight its potential, alongside substantial challenges (Phillips et al. 2011). Aquaculture activities in the Western Province have focused on the mariculture of seaweed, coral and clam (Hviding 1993; Prange et al. 2009; WorldFish 2011). These activities began in the early 1990s through research programs that were implemented by MFMR, WorldFish and WWF as an alternative income generating activities for rural people. Trials in pearl farming, clamshells and sponge culture at WorldFish at Nusatupe have been successful from a technical perspective but there has been almost no uptake of the technology. Nevertheless they have been described as presenting a good opportunity for expansion of the fisheries sector (United Nations 2002). Seaweed farming in Rarumana and Shortland Islands involved 130 farmers in 2005 alone (Kronen et al. 2010). Seaweed produced from these farms was exported overseas and this attracted more local farmers into the business. Similarly, some farmers cultured marine ornamentals for the aquarium trade. A total of 28 clam farmers and 8 coral farmers sold their products to Aquarium Arts, the exporter in Honiara (WorldFish 2010, 2012). Challenges in these mariculture activities are limited to the market and costs of transportation (Kronen et al. 2010; WorldFish 2010). Seaweed production was impacted by the sedimentation effects of the 2007 tsunami (Kronen et al. 2010). Production in the aquarium trade was also affected by the limited number of local exporters (one) who controls the buying prices (WorldFish 2010). Despite these challenges, a small number of individuals are continuing with these activities (WorldFish 2010, 2013).

Fish farming is not a usual activity for people in Solomon Islands, and in Western Province most communities are situated along the coast with easy access to fish from the sea, reefs and local fish markets. Only two households in Gizo were known to have reared Mozambique tilapia (*Oreochromis mossambicus*) for household consumption (personal communication,

C. Pita). In 2013, at the culmination of a study to examine seasonality of availability of milkfish fry and suitable nursery conditions, WorldFish worked in partnership with a farmer in Gizo to conduct a grow-out trial on milkfish (*Chanos chanos*). The trial showed positive results with a high survival rate. However, a ready supply of wild caught fry must be available for stocking of ponds if milkfish is to become a suitable species for farming. The level of anticipated future demand for land-based aquaculture in Western Province has not yet been assessed.



Within Solomon Islands, cultural values and expectations of men and women are transmitted through well-defined gender roles. Gender refers to the socially constructed roles attributed to males and females and is something that permeates all aspects of daily life in Solomon Islands (Kruijssen et al. 2013).

UNDP Human Development Report 2007/2008 ranked Solomon Islands 129 out of 177 countries in the Gender-related Development Index (GDI) (Govan et al. 2013). This can be attributed to gender inequities across environmental, economic and social dimensions of life within Solomon Islands. Environmentally, the inequalities experienced by women include vulnerability to risks and shocks based on events such as natural disasters, resource degradation and climate change (Govan et al. 2013). Economically, there are distinct disparities in gender workplace participation and share of production resources. Socially, inequities are reported in decision-making, leadership and high rates of gender-based violence, for example over 60% of women experience physical or sexual violence at the hands of an intimate partner (MWYCA [Ministry of Women Youth and Children Affairs] 2009)

## Gender-based research and interventions

There is minimal research on the roles of gender in natural resource management within the Western Province. There is one explicit examination of gender and natural resource management on Kolombangara Island that examines several NGO conservation and alternative livelihood projects. In 2011 a short study (unpublished data) was carried out in Leona Village, Vella Lavella investigating gender roles in sustainable forest management and highlighted the disparities between gender roles in decision-making and forest related activities. The findings concluded that although a matrilineal systems exists, where land is inherited through the mother, decisions made about land mainly rest with men because of 'kastom'<sup>1</sup>, (which is consistent with findings of other Melanesian studies (Macintyre 2008). It was reported that women are allowed to participate in resource management discussions and voice

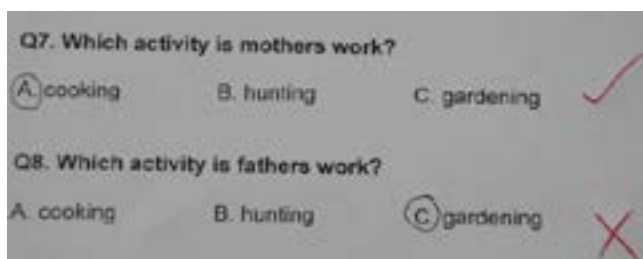
their concerns or ideas, but ultimately the male tribal and community leaders make the overall decisions. Although gender-based livelihood projects supported by donors encourage the increased inclusiveness of women, in some cases there is little capacity or understanding within NGOs about how this can be done effectively and appropriately. This was also evident in the 2011 gender study in Leona where it was reported that women were unable to choose the livelihood project they were interested in or wished to join, indicating a lack of participation and consultation of women by NGOs.

Until recently, practitioners and policymakers have tended to ignore the gender dimensions of development work. However, the importance of addressing gender inequality nationally is reflected in the 2009 National Policy on Gender Equality and Women's Development (GEWD) in the Solomon Islands. This focuses on improving the economic status of women through improved access to and share of productive resources and the equal participation of women and men in decision-making and leadership (MWYCA [Ministry of Women Youth and Children Affairs] 2009). Additionally, the Western Province Council of Women (WPCW), affiliated with the National Council of Women is a legal body that deals with the affairs of women and girls. The WPCW is working towards establishing women ward councils in all 26 wards to improve the linkage between rural and urban women in the Western Province (Western Provincial Government 2012). The aims of the WPCW are to:

- improve health and literacy standards in the villages ... enhancing the involvement of women in politics and business, making finance readily available through micro-project schemes for all women in 26 wards, running special short courses and workshops in simple business training and skills, collection of data and information about the needs of women and youth since analysis data for women in the province is not available. (Western Provincial Government 2012).

However, these activities have not yet been implemented due to lack of provincial funding (Figure 3).





**Figure 5.** Photo taken of questions in a marked copy of a 2013 national primary school English exam in a village in Choiseul (Lawless 2013)

## Gender and subsistence activities

Traditional Solomon Island culture defines the roles of women and men where, generally, household and gardening duties are preserved for women; and responsibilities for the clearing of land, building canoes, hunting and fishing remains the role of men. Despite Solomon Island cultures evolving through influences such as Westernization, these traditional roles have remained virtually unchanged (Figure 5) (Pollard 2000).

Subsistence activities are important in order to meet the needs of households in rural Western Province, with men and women often having varied but important roles. Hviding (1996) described the roles of men and women in Marovo Lagoon as being parallel with other Pacific Island societies. While women tend

to look after the household by taking care of children and preparing food, both men and women share the productive role. Women's productive work is generally focused on the 'bush' or gardening while men participate in direct extraction activities such as fishing (Hviding 1996). Interestingly, some findings argue that there is a flexibility in gender roles, for example men will usually take over all gardening activities in the months after a child is born and in some communities women will travel to the reefs to collect shellfish (Hviding 1996). In Roviana and VonaVona Lagoons, the division of labor between men and women has been described as being less differentiated compared with other Melanesian societies. For instance, both men and women tend gardens and go fishing, while domestic duties are shared. However, it is noted that the degree of effort by men and women varies within individual households (Aswani 1997). Likewise, in a gender disaggregated assessment of livelihoods in a Western Province community on Gatokae Island, carving was the only livelihood activity not undertaken by women (Table 7), with 100% of men and women respondents stating that they were involved in reef fishing and gardening (Kruijssen et al. 2013). During a post-tsunami assessment study, the majority of both men and women across 10 Western Province villages stated that gardening was their primary livelihood activity (Table 9) (Prange et al 2009).

Livelihood activities	Community 1		
	% of households	% of men	% of women
N	10	13	15
Reef fishing	100	100	100
Collecting other marine resources	60	69	33
Gardening	100	100	100
Foraging (collection from the wild)	100	92	100
Plantation (coconut, trees)	80	85	73
Coconut oil	100	85	100
Copra	80	77	73
Selling/bartering of fish/marine resources	100	77	87
Selling/bartering of gardened/foraged products	100	69	87
Selling/bartering of plantation products	70	38	60
Selling/bartering of processed products	100	85	80
Tourism	90	77	93
Carving (handicrafts)	80	77	0
Work outside the village (migrant labor)	90	62	60
Other income generating activities	50	8	40
Mean total number of activities	14.5	11.8	10.9

Source: Kruijssen et al. (2013)

**Table 9.** Gender disaggregated livelihood activities in a village on Gatokae Island

## Gender and income generating activities and formal employment

In comparison to subsistence activities, there appears to be less gender differentiation in informal income generating activities (Table 10). The dynamics of gender roles in income-based livelihoods are different between villages, largely driven by the availability of cash generating activities. In a village on Gatokae Island, men and women participated mostly in tourism, copra, marketing and labor for cash income (Kruijssen and Albert 2012). In Vella Lavella, both men and women listed copra, and gardening as the top two income generating activities (Paul et al. 2010), while in the Shortland Islands, copra and marine resources were the dominant sources of cash income for both men and women, although women targeted trochus and men targeted fish (Boso et al. 2010).

In recent studies conducted by WorldFish in the Shortland Islands and Vella Lavella Island, men and women were asked to state their primary occupation. The results indicated there was a clear focus for women on the production of food, with gardening being the most common livelihood activity although fishing, marketing, employment and domestic household tasks were also important. There was less of a focus on gardening for men, with a greater proportion of men stating fishing, employment/labor and building as their primary occupation (Boso et al. 2010; Paul et al. 2010).

It was found that in Western Province communities, commonly-owned household fishing assets included: paddle canoes, spear guns, hook and line, bamboo poles, and diving goggles or masks (Aswani 1997; Boso et al. 2010; Paul et al. 2010; Kruijssen and Albert 2012). In a detailed market chain analysis, it was shown that paddle canoes were the only asset commonly owned and used jointly by husbands and wives (Kruijssen and Albert 2012). The ownership of other fishing assets reflects the previously described gender division in fisheries-based activities (Boso et al. 2010; Paul et al. 2010; Kruijssen et al. 2013) with men having access to a wider range of fishing gear than women (Prange et al. 2009).

Women are usually involved in fishing to some degree in Western Province, with people in Marovo Lagoon noting that women and children now fish in a frequency and manner not permitted in the past (Duke et al. 2007). Indeed women from the Roviana and Vonavona lagoons are reputed to be some of the most avid fishers in the region (Aswani 1997). There is some degree of gender differentiation in the fisheries domain. While both men and women are involved in the marketing of fresh fish (Kruijssen and Albert 2012) women are involved in processing and selling of cooked fish at market (Weiant and Aswani 2006; Kruijssen et al 2013). Additionally, a strong gender differentiation is evident with respect to species targeted. Gleaning for shellfish and line fishing in

	Vella Lavella (Paul et al., 2010)		Shortland Islands (Boso et al., 2010)		10 Western Province villages (Prange et al, 2009)*	
	Women	Men	Women	Men	Women	Men
<b>Gardening</b>	54	33	48	29	60	59
<b>Fishing</b>	8	11	12	43	30	34
<b>Household</b>	18		12			
<b>Employment/Labor</b>	7	20	24	14	3	4
<b>Marketing</b>	13					1
<b>Builder</b>		8		7		
<b>Other</b>		14	4	7	7	

\* Data summarized across the 10 study communities

**Table 10.** Primary livelihood activities of women and men in Western Province villages as a percentage of respondents

inner lagoons are common activities for women, whereas reef and oceanic fishing are primarily the men's domain. For example in a village in the Shortland Islands, 32% of women owned goggles compared to only 3% of men, whereas 76% of men owned line and hook compared to 32% of women. The women used the goggles to target marine resources such as trochus and other shellfish, beche-de-mer and crayfish, whereas men primarily targeted reef and oceanic fishes (Boso et al. 2010). In comparison, in a community on Gatokae Island, rough seas, strong currents and the religious prohibition of consuming molluscs, precludes women from offshore fishing and gleaning for shellfish. In this village, women primarily focused their fishing efforts from shore by using bamboo rods or in shallow coastal waters using hand lines, whereas men's methods included spear fishing and trolling (Kruijssen and Albert 2012).

Only 15% of workers in the Solomon Islands formal employment sector are women (AusAID 2010). The Western Provincial Government (2012) reports that male employees dominate their workforce, with an average of 68 men compared to every 11 women employed. Additionally, there is a very low representation of women in parliament. Since independence, only two female MPs have been elected to Solomon Islands Parliament (Hon. Hilda Kari in the 1980s and Hon. Vika Lusibaea who was elected in a by-election for her husband's seat in August 2012) (UNDP Pacific Centre 2012). In the Western Province, there is currently only one Member of Parliament, Hon. Jane Tozaka, who was elected in 2013 representing the Iriqila/Jorio ward on Vella Lavella.

In 2008, it was proposed that the government should introduce 10 reserved seats for women (1 seat for each of the Solomon Islands 9 provinces and 1 seat for the capital city of Honiara). The proposal did not attract the support of the cabinet. However the 2010 government indicated in its policy statement that they would look at options for women's reserved seats, but this has not progressed to date (UNDP Pacific Centre 2012).

## Gender and decision-making

In some circumstances, decision-making at the community level is reached through collective input from village members, with the final decision made by the village chief. Despite differences in opinion, the most important thing for all group members is that they remain a harmonious collective. Given the importance of harmony and the cultural perceptions of the role of women, women are unlikely to participate in public meetings or put forward their views in the same way, or in the same forums, as men (CGIAR Research Program on Aquatic Agricultural Systems 2012, p.8). Men tend to dominate decision-making processes and hold most of the leadership positions in the community (Boso et al. 2010; Kruijssen et al. 2013). Generally, women's education levels are much lower than men, with reports that three-quarters of rural women in the Western Province are illiterate (Western Provincial Government 2012). This is due to the general cultural perception that women have a reproductive role in society, further excluding them from involvement in decision-making (Vunisea 2008). This cultural barrier is particularly evident in female involvement in decision-making regarding natural resource management. For instance, landownership in the Western Solomon Islands (unlike other parts of the country) is matrilineal, yet the decision-making about land resides with men. In communities where WorldFish had been active in working with resource owners and users to implement CBRM, only small numbers of women (and youth), relative to men, were actively involved (Boso et al. 2010; Paul et al. 2010) leading to a more specific consideration of gender in recent years.

Conversely, decision-making on the daily functioning of the household, and control and use of money differs between households and communities, with some decisions being made by either men or women alone, while others being made jointly. Studies that have considered the gender roles in decision-making in Western Province communities have identified that household decisions about children's education, weddings and church offerings are most commonly made jointly, whereas decisions about health care and medical expenses are most commonly made by women alone (Boso et al. 2010; Paul et al. 2010; Kruijssen and Albert 2012).

## NUTRITION SITUATION ANALYSIS

People in rural Western Province have access to food through gardening, fishing, hunting and can purchase store-bought foods after selling products or labor for cash. In the past, the most common staple foods have been the starch-rich sweet potato, yam, cassava, taro and banana, while fish made up 90% of animal source food intake (Allen et al. 2006). In recent years however, local food production has significantly declined due to the effects of urbanization and access to food imports such as rice, flour, noodles and sugar (Anderson et al. 2013). Cheap, poor quality imported foods with little nutritional value have penetrated markets and have increased rates of non-communicable diseases, such as obesity, diabetes, heart disease and associated health problems. The prevalence of overweight adults and obesity in the Western Province is high compared to other provinces (Table 11).

Unfortunately there are also problems with poor nutrition and undernutrition. A health survey carried out in 2007 by the Ministry of Health and Medical Services found that 32.8% of children under the age of five were stunted (Table 12), with 8% severely stunted<sup>2</sup> (Solomon Islands Government 2011). A number of small countries in the Pacific including Federated States of Micronesia and Solomon Islands face a double burden of diseases: children with stunted growth due to malnutrition and overweight adults resulting from poor diets (Cassels 2006; Anderson et al. 2013). This problem is a major setback for health authorities in rural areas because of lack of resources and inadequate capacity to address the situation.

	Total	Honiara	Guadalcanal	Malaita	Western
<b>Overweight</b>					
Women	29.9	32.9	21.9	30.3	28.7
Men	25.0	27.5	24.6	19.9	28.4
<b>Obese</b>					
Women	14.5	24.9	11.0	12.0	18.9
Men	5.8	18.0	3.8	3.5	3.5
<b>Underweight</b>					
Women	1.9	1.6	2.7	2.3	1.3
Men	2.2	0.6	3.8	0.7	3.2

Source: Solomon Islands National Statistical Office 2009

**Table 11.** Percentage of women and men > 15 years classified as overweight, obese and underweight

	Total	Honiara	Guadalcanal	Malaita	Western
<b>Height-for-age</b>					
< -2 SD	32.8	24.1	34.3	33.5	32.6
< -3 SD	8.5	5.7	11.7	10.4	10.1
<b>Weight-for-age</b>					
< -2 SD	11.8	10.0	14.3	11.7	16.6
< -3 SD	2.4	0.4	3.0	3.3	4.1
<b>Weight-for-height</b>					
< -2 SD	4.3	4.3	4.9	5.8	5.9
< -3 SD	1.4	0.3	1.8	2.9	2.7
> +2 SD	2.5	2.9	0.9	5.6	4.2
<b>Birth weight</b>					
< 2.5kg	12.5	11.4	12.7	17.1	12.6
≥ 2.5kg	87.5	88.6	87.3	82.9	87.4

Source: Solomon Islands National Office 2009

**Table 12.** Percentage of children under five years classified as malnourished

## Appendix I: The type of agencies and the role they play in Western Province

Acronym	Full name	Organization type	Location	Role or description
ACIAR	Australian Center for International Agricultural Research	Donor	Australia	To plan, fund and manage projects across a broad range of agricultural and development areas
ADB	Asian Development Bank	Donor	Honiara	Provide funding that will help to improve people's lives
ADRA	Adventist Development and Relief Agency	NGO	Honiara	To identify and address social injustice and deprivation in developing countries and seek to improve the quality of life of those in need
Agriculture WP	Agriculture Western Province	Government agency	Gizo	1. Provide technical advice to farmers on crops and livestock husbandry 2. Facilitate and implement government programs
ANZ	Australian & New Zealand Banking Group Limited	Private sector	Honiara, Gizo	Provide banking services to customers
AUSAid	Australian Aid	Donor	Honiara	Assist developing countries to reduce poverty and achieve sustainable development
BSP	Bank South Pacific	Private sector	Honiara, Gizo	Provide banking services to customers
Business Houses	Business Houses	Private sector	Honiara, Gizo, Western Province	Providing efficient and reliable services to the people of Western Province
CDF	Constituency Development Fund	Government agency	Honiara, Gizo	Fund allocation to constituency for development purposes to individual groups' income generating projects or community project.
Church Groups	Church groups	Church group	Western Province	An important institution in the Western Province through which development initiatives can be channeled. The major churches are contributing much to the education, health and forestry sectors of the province.



Acronym	Full name	Organization type	Location	Role or description
Commerce	WP Commerce	Government agency	Honiara, Gizo	To oversee and provide business advice and implement commerce policies for the business enterprises of the province
Community	Communities Association – Cocoa + Coconut	Community-based organization	Gizo	To be the agent to enable rural farmers to access funds from various donors.
CPC	Crime Prevention Committee	Government agency	Gizo	To ensure people are living in a crime free community.
CTI CTSP	Coral Triangle Initiative Coral Triangle Support Program	Network	Honiara	To address the urgent threats facing the coastal and marine resources of one of the most biologically diverse and ecologically rich regions on earth. Plan of Action: 1. Designate and effectively manage priority seascapes, 2. Apply ecosystem-based approach to fisheries, 3. Establish networks of marine protected areas, 4. Strengthen resilience and adaptation to climate change, 5. Strengthen measures to protect threatened marine species.
Dive Gizo	Adventure dive shop	Private sector	Gizo	Organizing and providing diving trips to relevant dive sites around Gizo and in the Western Province. Has PADI dive facility and PADI instructor
Education WP	Education Western Province	Government agency	Gizo	To be an agent for MEHRD in WP to achieve the goals/objectives of MEHRD in WP.
EU	European Union	Donor	Honiara	Provides financial support to sustainable rural development programs.
Fisheries WP	Fisheries Western Province	Government agency	Gizo	To oversee the fisheries activities of the WP in: management - research, conservation etc., and development - fisheries centers, marketing, people.
GELCA	Gizo Environment Livelihood Conservation Association	Community-based organization	Gizo	Gizo community based association that protects interests of local communities in Gizo in marine resource conservation for social and economic benefits.



Acronym	Full name	Organization type	Location	Role or description
Gizo Town Council	Gizo Town Council	Government agency	Gizo	Responsible for cleaning Gizo town, collecting of public rubbish and maintaining cleanliness of the market area.
JICA	Japan International Cooperation Agency	Donor	Honiara	To achieve its 4 missions: 1. addressing the global agenda, 2. reducing poverty through equitable growth, 3. improving governance, and 4. achieving human security through its 4 strategies: 1. integrated assistance, 2. seamless assistance, 3. promoting development partnerships, and 4. enhancing research and knowledge sharing.
KFPL	Kolombangara Forestry Plantation Limited	Private sector	Kolombangara	KFPL is an FSC certified sustainable timber plantation company presently owned by the Solomon Islands Government. KFPL provides in kind and financial support to KIBCA's operations
KGA	Kastom Gaden Association	NGO	Honiara	Food security in Solomon Islands
KIBCA	Kolombangara Island Biodiversity Association	Community-based organization	Kolombangara	To protect Kolombangara Islands' rich marine and forest biodiversity and to educate, promote and encourage sustainable management of natural resources through viable economic and social ventures for our communities
LALSU	Landowners Advocacy and Legal Support Unit	Government agency	Honiara	Legal unit that gives free legal advice to landowners on environmental issues. Provides awareness and assists in law reform.
Legal & Justice	Legal & Justice	Government agency	Honiara	To ensure there is fair and efficient justice for all Solomon Islanders.
Live and Learn	Live and Learn Environmental Solomon Islands	NGO	Honiara	For a sustainable and equitable world free from poverty
Logging companies	Logging companies	Private sector	Western Province	Companies that are certified legally to carry out operation in a forest for the extraction of logs

Acronym	Full name	Organization type	Location	Role or description
MAL	Ministry of Agriculture and Livestock	Government agency	Honiara	To provide extension, education, regulatory, research and associated activities to improve the agricultural sectors contribution towards increased food production, food security and standards, and economic recovery and development
MCILI WP	Ministry of Commerce, Industries Labour and Immigration Western Province	Government agency	Gizo	Responsible for providing effective and efficient service delivery, promote growth within the private sector for a progressive economy
MDPAC	Ministry of Development, Planning and Aid Coordination	Government agency	Honiara	Coordinates line ministry development projects + donors. Line Ministry for EU micro projects and RDP
MECDM	Ministry of Environment, Climate Change, Disaster Management and Meteorology	Government agency	Honiara	MECDM is mandated to promote and ensure safe, sustainable and resilient Solomon Islands communities (MECDM Corporate Plan 2011–14)
MEHRD	Ministry of Education and Human Resources Development	Government agency	Honiara	Oversees leads and develop educational services in Solomon Islands. It is responsible for setting education strategies and curriculum, writing national examinations, coordinating teacher training, paying salaries, and issuing and auditing operation grants to schools and education authorities
MFMR	Ministry of Fisheries and Marine Resources	Government agency	Honiara	Ensure the orderly development and quality management of Solomon Islands fisheries and marine resources; and to ensure that Solomon Islands receive maximum economic and social benefits from the sustainable use of its fisheries and marine resources (MFMR Corporate Plan 2011–2013).

Acronym	Full name	Organization type	Location	Role or description
MHMS	Ministry of Health and Medical Services	Government agency	Honiara	To play its part in improving the public's health status through: 1. Proactive stewardship of the sector with a focus on Primary Health Care (PHC) and Healthy Islands efforts via active community empowerment and development, 2. Building partnerships with communities, other sectors (i.e. agriculture, education, labor, transport, infrastructure, etc.) and provincial governments will be crucial in achieving these initiatives; and 3. The sector will also plan and manage health improvements with a focus on reducing the determinants of disease and illness including improved disease management.
MINBALT	Marovo Island National Biodiversity And Livelihood Trust	Community-based organization	Gizo	Protecting and conserving natural resources
MMERE	Ministry of Mines, Energy and Rural Electrification	Government agency	Honiara	Responsible for formulating and implementing energy policy and monitoring and evaluating its impact.
MoF	Ministry of Forestry	Government agency	Honiara	Responsible for the overall management of the forest resources of the SI. Also responsible for the drafting, enacting and implementing of forestry legislation and policy.
MP	Members of Parliament	Network	Honiara	Members of Parliament have the role of representing the people's view to the national parliament and the government and represent the actions of the house and the government to the people in their various constituencies.
MPAs	Marine Protected Areas	Community-based organization	Western Province	Protecting marine resources

Acronym	Full name	Organization type	Location	Role or description
MPGIS	Ministry of Provincial Government and Institutional Strengthening	Government agency	Honiara in Ministry of Provincial Government	Develop the capacity of provincial governments in the Solomon Islands to deliver services and promote local development. Includes access to RCDF funds
MRD	Ministry of Rural Development	Government agency	Honiara	Primary role is to contribute to the implementation of government policy on the development of growth centers and the creation of rural economic communities throughout the 50 constituencies
MWYCF	Ministry of Women, Youth, Children and Family Affairs	Government agency	Honiara	Guided by policy on gender equity and women's development
National Disaster	National Disaster	Government agency	Honiara	NDMO is responsible for organizing emergency management arrangements, coordinating the national disaster operations and issuing of public safety messages/evacuation orders through radio and television.
NFD	National Fisheries Development	Private sector	Noro, Honiara and trades tuna	Local commercial tuna company collects and processes
NRDF	Natural Resource Development Foundation	NGO	Gizo	A non-governmental organization that is committed to promoting and supporting sustainable natural resource management by local landowners in turn protecting social, economic and environmental assets
NZAid	New Zealand Aid	Donor	Honiara	NZAid is the NZ Government's international aid and development program to support sustainable development in developing countries in order to reduce poverty and contribute to a more secure, equitable and prosperous world. It is managed by development specialists in the Ministry of Foreign Affairs and Trade.

Acronym	Full name	Organization type	Location	Role or description
PD WP	Planning Division Western Province	Government agency	Gizo	Planning and implementation of development projects in the province and coordinate the institutionalization of provincial based institutions to ensure integrated planning processes
Police WP	Police Western Province	Government agency	Gizo	Maintaining law and order in Gizo township.
PDO	Provincial Disaster Office	Government agency	Gizo	Implement and manage disaster awareness and preparedness programs.
PE	Provincial Executives	Network	Gizo	Implement the provincial and national legislations, develop provincial policies, coordinate and administer functions of the province.
RCF	Roviana Conservation Foundation	Community-based organization	Munda	Supports and implement environment conservation and natural resource management in Roviana local communities.
RDP	Rural Development Program	Government agency	Honiara	To be an effective mechanism for channeling resources to rural communities through MDPAC & MAL. To respond to priorities identified by rural communities for improvement of village level social and economic infrastructure services, to raise the delivery of agriculture extension services to rural farmers and communities and to extend support to rural businesses.
RDP WP	Rural Development Program Western Province	Government agency	Gizo	To be an agent for RDP in WP and carry out the roles or description for RDP in the WP.
Red Cross	Red Cross	NGO	Gizo, Honiara	Local experts in community health, water and sanitation and disaster management – to support their efforts in community health and disaster preparedness.



Acronym	Full name	Organization type	Location	Role or description
RWSS WP	Rural Water Supply and Sanitation Western Province	Government agency	Gizo	Healthy Solomon Islanders with easy access to sufficient quantity and quality of water and appropriate sanitation, and living in a clean and hygienic environment
SC	Save the Children	NGO	Gizo	Promoting children's rights, provides relief and helps to support children. More focus on youth and children.
SICCP	Solomon Island Community Conservation Program	NGO	Honiara	Ensure sound governance, financial sustainability, and globally significant conservation through a set of Community Conservation Agreements that support community-driven protection of the rich natural and cultural heritage of the Solomon Islands.
SIG	Solomon Islands Government	Government agency	Honiara	Government of the Solomon Islands.
SIVB	Solomon Islands Visitors Bureau	Private sector	Honiara	Promoting Solomon Islands to tourists from overseas.
Social welfare	Social welfare	Government agency	Honiara	Implement laws relating to family, children and violence. Promote human rights, family counseling and strong families.
SOLTUNA	SOLTUNA	Private sector	Noro, Honiara	National tuna loining and canning processor
SPC	Secretariat of the Pacific Community	Regional organization	Fiji	International organizational that is committed to helping Pacific islands achieve sustainable development
TDA	Tetepare Descendants Association	Community-based organization	Munda	To manage and protect the resources of the Tetepare island as a conservation area
UNCDF	United Nations Capital Development Fund (UNCDF)	NGO	Honiara	The UN's capital investment agency for the world's 48 least developed countries. It creates new opportunities for poor people and their communities by increasing access to microfinance and investment capital.

Acronym	Full name	Organization type	Location	Role or description
UNDP	United Nations Development Program (UNDP)	NGO	Honiara	Respond to current and emerging development challenges in close partnership with the government
UQ Marovo	University of Queensland Marovo	University	Australia	Support community based marine and terrestrial resource management
USAID	United States of America Aid	Donor	USA	Supports regional environment and climate change programs.
World Bank	World Bank	Donor	Honiara	International financial institution that provide loans to developing countries.
WorldFish	WorldFish	NGO	Nusa Tupe, Honiara, Malaysia	Reduce poverty and hunger through improved fisheries and aquaculture.
World Vision	World Vision	NGO	Honiara	Empowering communities to shape and drive their own development.
WPCW	Western Province Council of Women	Network	Gizo	To empower women in WP (in all 26 wards) to have a voice in the provincial government. Organize/coordinate programs that will improve the lifestyle of women in the rural area. Such programs include home management, women's savings etc.
WP ME	Western Province Ministry of Environment	Government agency	Gizo	Is the provincial link with MECDM and as a link the provincial environment department relates and collaborate with all environmental activities in WP.
WP MF&A	Western Province Ministry of Fisheries and Agriculture	Government agency	Gizo	Agriculture: Deliver agriculture services to farmers in WP. These services include: quarantine, livestock, pest control and providing high yielding crop varieties to farmers. Fisheries: To oversee the fisheries activities of the WP in: 1. Management – research, conservation etc. and 2. Development – fisheries centers, marketing, people.

<b>Acronym</b>	<b>Full name</b>	<b>Organization type</b>	<b>Location</b>	<b>Role or description</b>
WP MT	Western Province Ministry of Tourism	Government agency	Gizo	Promoting tourism in the WP by promoting WP as the best tourist destination in Solomon Islands
WP MW&Y	Western Province Ministry of Women & Youth	Government agency	Gizo	Responsible for implementing national policies. Promote and uphold rights of women, young people and children and families in the province
WP MoF	Western Province Ministry of Forestry	Government agency	Gizo	Responsible for the overall management of forest resources in the province
WPG	Western Province Government	Government agency	Gizo	An agent of national government that acts as the service delivery mechanism for the national government to the people of Western Province.
WPTA	Western Province Tourist Association	Private sector	Gizo	Safeguarding and promoting business interest of tourist operators in Western Province
WWF	World Wide Fund for Nature	NGO	Gizo	To stop and eventually reverse environmental degradation and to build a future where people live in harmony with nature, by: conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

# NOTES

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- <sup>1</sup> Kastom is a Melanesian pidgin expression used to refer to traditional culture, including religion, economics, art and magic (Ipo 1989)
- <sup>2</sup> Stunting is a result of long-term deficiency of energy and nutrients, as a consequence of repeated exposure to illness and/or inadequate food intake over a long period

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# LIST OF ABBREVIATIONS

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AAS	CGIAR Research Program on Aquatic Agricultural Systems
ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
ARDS	agriculture and rural development strategy
ADRA	Adventist Development Relief Agency
AusAID	Australia Agency for International Development
AVDRC	The World Vegetable Center
AVI	Australian Volunteers International
Canoe VTT	Canoe Village Technology Trust
CBDP	community based disaster preparedness
CBRM	community based resource management
CCA	climate change adaptation
CFC	Christian Fellowship Church
CGIAR	A Global Research Partnership for a Food Secure Future
CRP	CGIAR Research Program
CTI	Coral Triangle Initiative
CTSP	Coral Triangle Support Partnership
DAL	Department of Agriculture and Livestock
DMF	Dutch Millennium Foundation
ECE	early childhood education
EU	European Union
FAD	fish aggregating device
FORCERT	Forest Management and Product Certification Service
FSC-AU	Forest Stewardship Council Australia
FSPI	The Peoples of the South Pacific International
GDI	Gender-related Development Index
GEWD	Gender Equality and Women's Development
HDI	Human Development Index
IFC	International Finance Corporation
IRD	Research Institute for Development
IWMI	International Water Management Institute
JAC	Jones Adventist College
JCU	James Cook University
KFPL	Kolombangara Forestry Plantation Limited
KGA	Kastom Gaden Association
KIBCA	Kolombangara Island Biodiversity Conservation Association
LMMA	The Locally-Managed Marine Area
MAL	Ministry of Agriculture and Livestock
MDG	Millennium Development Goals
MDPAC	Ministry of Development Planning and Aid Coordination
MECDM	Ministry for Environment, Climate Change, Disaster Management & Meteorology
MFMR	Ministry of Fisheries and Marine Resources
MINBALT	Marovo Indigenous Natural Biodiversity and Livelihoods Trust
MLST	Marovo Lagoon Sustainable Timbers
MOI	Malaita Outer Islands
MoU	Memorandum of understanding

MP	Member of Parliament
MPA	marine protected areas
MSSIF	Mekem Strong Solomon Islands Fisheries
MWCYA	Ministry of Women, Youth and Children Affairs
NAPA	National Adaptation Plan of Action
NCC	National Coordinating Committee
NDC	National Disaster Council
NDMO	National Disaster Management Office
NFD	National Fisheries Development
NGO	non-governmental organization
NRDF	Natural Resource Development Foundation
NRM	natural resource management
NZAID	New Zealand Agency for International Development
OFT	on farm trial
OXFAM	Oxford Committee for Famine Relief
PGSP	Provincial Government Strengthening Programme
PNG	Papua New Guinea
PRA	Participatory Rural Appraisal
RAMP	Rural Advancement Micro Project
RAMSI	Regional Assistance Mission to Solomon Islands
RCF	Roviana Conservation Foundation
RSIPF	Royal Solomon Islands Police Force
RTC	rural training center
RWSS	Rural Water Supply and Sanitation
SDA	Seventh-day Adventist
SIBC	Solomon Islands Broadcasting Corporation
SICHE	Solomon Islands College of Higher Education
SILMMA	Solomon Islands Locally Managed Marine Areas
SINU	Solomon Islands National University
SPC	Secretariat of the Pacific Community
SSEC	South Seas Evangelical Church
TDA	Tetepare Descendants Association
TOC	theory of change
UK	United Kingdom
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USP	University of the South Pacific
UQ	University of Queensland
VATA	Value Added Timber Association
VHF	very high frequency
VO	village organizer
WATSAN	water and sanitation
WPIC	Western Province Investment Corporation
WWF	World Wide Fund for Nature





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The CGIAR Research Program on Aquatic Agricultural Systems is a multi-year research initiative launched in July 2011. It is designed to pursue community-based approaches to agricultural research and development that target the poorest and most vulnerable rural households in aquatic agricultural systems. Led by WorldFish, a member of the CGIAR Consortium, the program is partnering with diverse organizations working at local, national and global levels to help achieve impacts at scale. For more information, visit [aas.cgiar.org](http://aas.cgiar.org).

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