

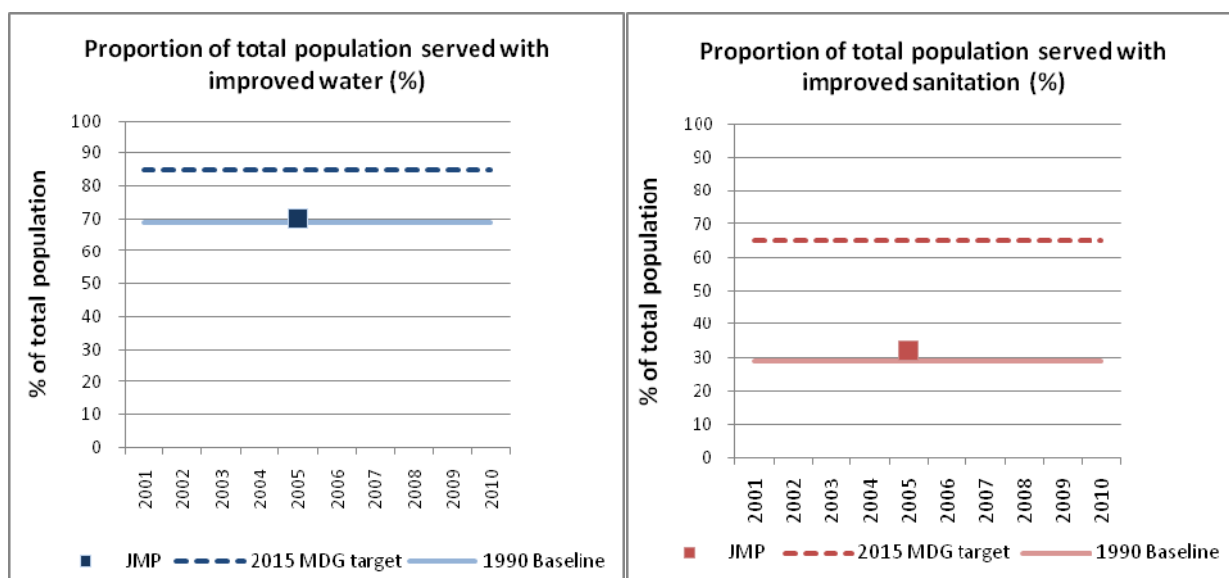
Headline issues

- All sections of the government responsible for aspects of the WASH sector face challenges in fulfilling their duties due to a lack of resources and poor coordination.
- Similar to other Pacific Island Communities, installed systems suffer from a lack of maintenance and require repair and rehabilitation. This is a key area of need.
- Changes in land use have accelerated the decline in quality and quantity of freshwater resources and as such, access to piped water does not always translate to a 'safe' water supply.
- Groundwater resources are vulnerable to contamination (human and climate induced) and this presents a critical threat for water security in atolls and islets.

Coverage and WASH related health statistics

The Solomon Islands is unlikely to meet its 2015 MDG targets for either improved water supply (85% of total population) or sanitation coverage (65%) (Figure 1). Data collected under the WHO-UNESCO Joint Monitoring Program (JMP)¹ shows national water supply coverage to be 70% in 2005, with little improvement since 1990. Sanitation coverage has also remained unchanged, only increasing from 29% to 32% over 15 years, and is well below the regional average of 46%.² Several reasons may account for this. There has been widespread damage of infrastructure during the conflicts over the last decade and also by the 2007 tsunami.³ Second, given the recent history of conflict, external assistance has prioritised law and justice, governance and economic development programs.⁴ Finally, the Solomon Islands has a highly dispersed population across many islands, which makes provision of water and sanitation services highly challenging.

Figure 1: Access to improved water and sanitation



Source: WHO/UNICEF Joint Monitoring Program (JMP) (2010) data for 2008.¹

The only available trend in coverage is that provided by JMP data, since the Global Water Supply and Sanitation Assessment 2000 (GWSSA) also used the same data.³ No government time-series data for the sector was located during this research.

In cases of both JMP and GWSSA data, significant disparities can be seen between urban and rural areas. Urban water and sanitation are reported as close to universal (94% and 98% respectively^{2,5,6}) but in rural areas (where an estimated 80% of the population resides,⁷) figures are much lower (65% and 18% respectively).^{2,5} Between the provinces figures vary further and independent research in 2006 showed sanitation coverage to be as low as 8% in Temotu and water access to be 58% in Makira/Ulawa.⁸ These provinces were also found to have high rates of open defecation.⁸

A range of concerns are associated with urban water provision. In urban areas a SOPAC report in 2007 indicated that the majority of households received piped water (89%) but also reported that in Honiara, aged supply systems compromise water pressure and velocity for 25% of residents, and many higher income households use water tanks to supplement public water supplies.^{9,10} Water shortages were also reported to be the norm in Honiara, with a population of 72,000 in 2009, aggravated by leakages and rapid development.⁹ Urbanisation is estimated at 4.2% per year (2010-2015)¹¹ and is expected to exacerbate already overstretched and damaged water supply and sanitation infrastructure.⁹ There is also concern that piped water may not be of sufficient quality for human consumption, particularly where there is upstream contamination of surface water.^{8,9} Urban water supply in 2007 did not meet WHO drinking water standards since the Solomon Islands Water Authority (SIWA) only uses chlorine and does not otherwise treat its water or remove turbidity.⁹ Chlorination was reported to be not well-controlled and concentrations vary along the system,⁹ and in some cases have been linked with kidney problems.¹⁰

Most rural communities on the major volcanic islands typically depend on surface water for water supply.⁹ More remote populations, based on small atolls and islets, depend on rainwater harvesting (collected in tanks) and brackish shallow hand-dug wells, although groundwater quality is often inadequate for drinking.⁹ Where communities have been relocated due to logging or mining, water sources are often far away, increasing the burden of work for women.⁸ In some areas no maintenance of existing water supply systems or bores is recorded and most are in need of rehabilitation and repair;⁸ in rural areas as many as 50% of installed systems are operating under their design capacity or totally inoperative.⁷

Urban sanitation is typically onsite consisting of pour-flush toilets with a septic tank.⁹ Only Honiara has a gravity fed sewerage system and only 30% of residents are connected.⁹ Onsite systems suffer from poor design, construction and maintenance, and threaten surface and ground water – a problem likely to worsen with rapid urban growth and increasing population.⁹ As with water supply, rural sanitation access is worse than in urban areas; improved sanitation systems include pit latrines with various improvements⁹ but open defecation is common and 352,000 out of 430,000 rural people are without improved infrastructure.⁷

Schools suffer from low coverage. Water supply and sanitation coverage in the Solomon Islands' 1,000 schools is of particular concern⁷ – less than half (46%) have adequate water facilities and 59% have adequate sanitation facilities.³

Diarrhoea remains a leading cause of death in the Solomon Islands, contributing to 7% of mortalities in 2002.³ The Solomon Islands ranks toward the bottom of Pacific countries for all WASH-related health statistics (see Table 1), with only Papua New Guinea recording worse results.

Table 1: Summary health statistics

Infant mortality (deaths per 1000 births) ¹²	36
WASH-related DALYs (% of all DALYs) ¹³	9%
Total WASH related DALYs (Years) ¹³	7,826
Total WASH related deaths per year ¹⁴	197
WASH related proportion of deaths (%) ¹⁴	8%

Sources: World Bank and WHO as shown in endnotes

Finance trends

The Government's key planning document, the Medium-term Development Strategy (MTDS), 2008-2010, estimates the annual investment cost of national water and sanitation targets at US\$340,000¹⁵ 2009, doubling to US\$680,000 in 2010 and beyond to 2012.⁷ Government budget estimates for 2006-2008 suggest that within the Ministry of Mines and Energy (MME), the Division of Water Resources receives lower government priority compared to the mining, geology and energy sectors.¹⁶

In the time allocated to this research it was not possible to secure detailed information on finance trends or budgetary allocations for WASH in the Solomon Islands. The Solomon Islands are not included in the Global Annual Assessment of Sanitation and Drinking-Water (GLAAS) which includes indicators for adequacy of funding. Future inquiry in this area may be beneficial to identifying levels of investment necessary to approach the MDGs.

Sector governance

The Solomon Island's Draft National Water Policy (NWP) was developed under the EU-funded Solomon Island's Water Governance Project. The policy addresses water resource management, water supply and sanitation. It sets out a vision for universal coverage of water of adequate quality and quantity.¹⁶ Under this policy, water services provision for the country is the shared responsibility of three different organisations – the MME, the Ministry of Provincial Government and Constituency Development and the Ministry of Health and Medical Services.¹⁶ Responsibility for continuous review of the policy lies with the MME.

The EU-funded governance project also led to the inauguration of the Water Sector Steering Committee¹⁷ to coordinate sector and lead policy and legislative review.⁸ This review was not able to identify any recent reports that comment on this Committee's or any other WASH stakeholder group's progress towards sector coordination and anecdotal evidence suggests coordination is still lacking.¹⁸

The Division of Water Resources within the MME administers and manages the nation's water resources. According to SIG, this division employs six male technical staff and has limited skills in hydrological assessment, water quality monitoring and water resource management.¹⁶ Since the crisis access to transport, electric power supply, funds for travel and basic office expenses, telephone service, and basic e-mail communications have been intermittent or nonexistent.⁸

Land tenure disputes are a major governance issue in the sector, and have sometimes led to systems being deliberately vandalised or damaged.⁸ Freshwater resources are managed by the government but owned by private landholders.¹⁹ In Honiara landowners frequently disrupt the water supply in protest to lack of up-to-date payment of water leases by the Government.⁸ The Ministry of Lands, Survey and Housing is responsible for executing contracts for water rights with land owners and the Draft National Water Policy identifies this as an area in need of legislative review.¹⁶

In terms of regional cooperation, the Solomon Islands are signatories of the *Pacific framework for action on drinking water quality and health*, 2005.³ In 2006 Pacific leaders agreed that the water, sanitation and hygiene challenges facing the region should be critical priorities of the Pacific Plan and directly addressed through implementation of the Pacific Regional Action Plan on Sustainable Water Management (RAP).^{3,20}

Subsector governance

Urban water

The Solomon Islands Water Authority (SIWA) is responsible for the safe water supply and provision of sanitation services for urban populations (Honiara and four provincial capitals²¹) according to the *SIWA Act 1992*.^{10,16} SIWA functions under the MME's Division of Water Resources as a quasi-government body and charges customers for water use and connection to the sewage system.⁹ A review of SIWA conducted in 2005 by the Japan International Cooperation Agency (JICA) has informed the development of an urban water and wastewater action plan for the authority until 2015.^{8,9} SIWA employs the majority of people in the Solomon Islands water sector but continues to lack skilled personnel in the areas of operation and maintenance and customer management.¹⁶ SIWA has previously hired technical assistance staff on short-term contracts (up to five years) under a World Bank program to introduce best-practice management techniques.⁸

Water supply for provincial centres outside of SIWA's jurisdiction is the responsibility of the Ministry of Provincial Government and Institutional Strengthening.¹⁶

Urban sanitation

The Honiara City Council has some functions for sanitation, waste water and solid waste collection in the capital²² and operates sludge collection services from private septic tanks in conjunction with a private company.¹⁶ The National Water Policy articulates strategies to increase basic sanitation coverage and improve the effective management of the sector.¹⁶

Rural water and sanitation

The Ministry of Health and Medical Services' (MHMS) Environmental Health Division (EHD) oversees the provision of safe water supply and for monitoring sanitation conditions for rural populations through its Rural Water Supply and Sanitation Program (RWSS).^{7,10,16} There is not currently a national policy or any national legislation that identifies RWSS as the key agency for this sector, however the SIG recognises its role and allocates budget and staff accordingly.⁷ The Ministry employs 93 people in rural water supply operation and maintenance,¹⁶ including two engineers. In most cases donors underwrite capital costs of new infrastructure projects and the government pays for salaries.¹⁰ The RWSS was supported by AusAID prior to 2000.⁸

In 2009 the combined efforts of RWSS and its development partners provided rural water supply and sanitation facilities to approximately 15-20,000 people, illustrating the important role of NGOs in helping to meet demand.⁷ The challenges of servicing Solomon Islands' rural population are exacerbated in the context of rural population growth which is currently around to 11,000 people per annum.⁷

Program work is highly constrained by the remoteness of islands which makes work difficult and financially non-viable with a lack of sustainability in cost recovery.^{10,16} Rural communities are spread across disparate islands and in many cases relying on government for service delivery to rural communities is unrealistic. The Pacific WASH coalition sees NGOs and use of community management approaches as an effective way to reach remote populations,²⁰ however on-going sustainability of this approach without adequate financial support for capital

replacement costs and without adequate supply-chains is questionable. The Draft National Water Policy recommends further work be done on raising community awareness of water scarcity issues and their participation in protecting the quality of water supplies.¹⁶

RWSS occasionally works in a limited way with the Ministry of Education and Human Resources Department to undertake WASH projects in schools on the request of MoE.⁷

Health and hygiene

According to UNICEF, the government is committed to providing WASH education in all primary schools.³ The 2011 – 2015 National Health Strategic Plan (NHSP) includes RWSS activities as part of its strategic focus on public health programs.²³ The EHD has a dedicated Hygiene Promotion Unit (HPU) responsible for increasing community awareness and participation in the Ministry's WASH programs.⁷ SIG are implementing the NHSP by adopting a Health Sector Wide Approach²⁴ and this program also provides a long-term technical advisor to the HPU.⁷ UNICEF Pacific uses radio to disseminate messages in support of the Government's hygiene promotion activities.³

Climate change and water resources

The Solomon Islands ranks among the countries with highest level of renewable water resources per capita,²⁵ however freshwater availability varies considerably across the archipelago. Freshwater is abundant on the large volcanic islands of Guadalcanal and Choiseul due to the mountainous terrain. The atolls and islets have no surface water and draw their water supply from rainwater and groundwater from a thin freshwater lens of aquifers.^{9,19}

Aquifers on the islands are small and depend mainly on precipitation for recharge,¹⁰ therefore freshwater extraction from groundwater must be managed carefully. Aquifers are also highly vulnerable to the effects of human caused contamination as well as climate change related sea level rise and saltwater intrusion.

The abundance of freshwater in mountainous areas has meant that in the past people living in these areas have taken this resource for granted.¹⁰ There is evidence that the quantity and quality of freshwater is in decline but this is not well understood due to inadequate hydrological data and limited knowledge of local hydrology and water resources.^{9,19} More recently land use changes (logging, slash and burn agriculture and mining) also threaten key watersheds.^{9,10} The Forest Acts and Codes of Logging Practices provides a buffer zone for the watershed but have not been sufficiently implemented to prevent the effects of deforestation on water quality.¹⁰

Sustainable management of water resources in Solomon Islands lies with the Water Resources Division (WRD) at the Ministry of Mines and Energy. The WRD is responsible for drafting legislation for the effective management of the country's water resources and is also responsible for hydrological monitoring to provide data on surface and groundwater for urban and rural water supply, irrigation and hydropower planning, although it lacks monitoring capacity.¹⁹ The Draft National Water Policy identifies water resource management as an area lacking proper coordination leading to duplication and negligence of functional roles.¹⁶

Solomon Islanders are vulnerable to major droughts and flooding, both of which are expected to be strongly exacerbated by climate change¹⁰ which will affect rainwater patterns (see Table 2 which shows the high levels of climate vulnerability).³ A scarcity of decision-making tools and data undermines disaster preparedness and risk

management efforts of the country since there has been a significant decline in continuous time-series recordkeeping in the last 10-15 years.²⁶

Table 2: Climate vulnerability in the Solomon Islands

Renewable water (ML/population) ²⁵	88
Overall Climate Vulnerability factor 2010 ²⁷ (on scale of <i>Acute, Severe, High, Moderate, Low</i>)	Severe
Overall Climate Vulnerability Factor 2030 ²⁷ (on scale of <i>Acute, Severe, High, Moderate, Low</i>)	Acute
Environmental Vulnerability Status ²⁸ (on scale of <i>Extremely vulnerable, Highly vulnerable, Vulnerable, At risk, Resilient</i>)	Vulnerable

Donor environment

The major donors to the Solomon Islands include JICA, EU, Taiwan’s International Cooperation and Development Fund (ICDF), AusAID, UNICEF, SOPAC, UN’s Global Environment Fund (GEF) and a range of NGOs. The Pacific WASH coalition collaborates on WASH projects and knowledge sharing. This coalition includes: Foundation of the Peoples of the South Pacific International (FSPI), the Fiji School of Medicine (FSMed), Live & Learn, WHO, UNICEF, International Federation of Red Cross and Red Crescent Societies (IFRC), UN-HABITAT and SOPAC.²⁰ All coalition members are active in the WASH sector in the Solomon Islands. The specific areas of engagement for various donors are described below.

Water supply and sanitation: Donors to the rural sector include the EU, Australia, New Zealand, Canada, Japan and the Republic of China.⁸ The EU Rural Development Micro-Project Program (RAMP) has assisted number of communities to construct clinics, water supply and sanitation and schools.⁸ AusAID’s Community Sector Program (CSP) (2005-10) previously supported some small-scale community-based WASH activities and prior to this AusAID supported the RWWSP (1998-01) for water supply and sanitation facilities in the provinces. AusAID’s current Health Sector Support Program (2008-12) includes US\$6.3M for water and sanitation development through the Water and Sanitation Initiative (WSI) (2008/09 to 2010/11).^{7,24} JICA has worked closely with SIWA to improve water and sanitation systems for Honiara and three provincial centres.⁸ The majority of NGOs active in the sector focus on rural needs⁸ NGOs include World Vision, Live & Learn, the Red Cross²⁹, ADRA and Rotary.⁸

Governance: The EU funded Solomon Islands Water Governance Project provides technical expertise to the Provincial Governments and the Environmental Health Division (EHD)²² and is administered by SOPAC.^{8,9} The World Bank provides technical and management expertise to SIWA under contract.

Hygiene promotion: UNICEF Pacific’s Health and Sanitation program (2008-12) includes WASH activities in the Solomon Islands, Kiribati and Vanuatu.³ The main objectives for the Solomon Islands are to rehabilitate WSS infrastructure and undertake hygiene promotion and finance WSS infrastructure for schools.³ NZAID is a key donor in the education sector and has also played a role in sanitation and hygiene promotion focussing on curriculum development and schools.²² AusAID’s current Health Sector Support Program (2008-12) supports a sector-wide approach that includes hygiene promotion and developing demand for socially inclusive sanitation⁷ (see Health and Hygiene above).

Water resource management: SOPAC, funded by the UN’s Global Environment Fund (GEF), launched its Sustainable Integrated Water Resources and Wastewater Management Project in Pacific Island Countries in the Solomon Islands. This program was designed to introduce concepts of IWRM into governance structures at the national and local level.⁹ SOPAC also promotes the use of Water Safety Plans at both levels. Local NGO, Live & Learn promotes catchment management and undertakes water quality management with youth groups and schools.^{8,22}

Sector monitoring

With the support of the EU funded Solomon Islands Water Governance Project, the government has established a Water Sector Steering Committee responsible for articulating a monitoring system with targets and indicators,⁸ – as stated above, it is reported that this committee has been largely inactive and therefore it is unlikely that the monitoring system is currently being implemented.¹⁸

Hydrological monitoring is conducted by the MME on the two largest islands.⁹ Some NGOs, including Live & Learn have begun to involve communities in water resource monitoring programs to overcome the challenge of data collection on isolated islands.^{8,9} The EHD is responsible for water quality analysis to support rural water supply installation, but is not involved in analysis post-installation and therefore does not monitor contamination levels during use.⁸

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Contact: Juliet.Willets@uts.edu.au; Naomi.Carrard@uts.edu.au; Kumi.Abeysuriya@uts.edu.au



¹ WHO / UNICEF Joint Monitoring Program (JMP) for Water Supply and Sanitation <http://www.wssinfo.org/data-estimates/maps/>

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- ¹³ Disability-adjusted life year (DALY) measures the years of life lost to premature mortality and the years lost to disability. Source: 2004 update of the Table 1 and Annex of the publication 'Safer water, better health', by Prüss-Ustün et al, WHO, Geneva, 2008. Accessed 28 June 2011. Available at http://www.who.int/quantifying_ehimpacts/publications/saferwater/en/index.html.
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