

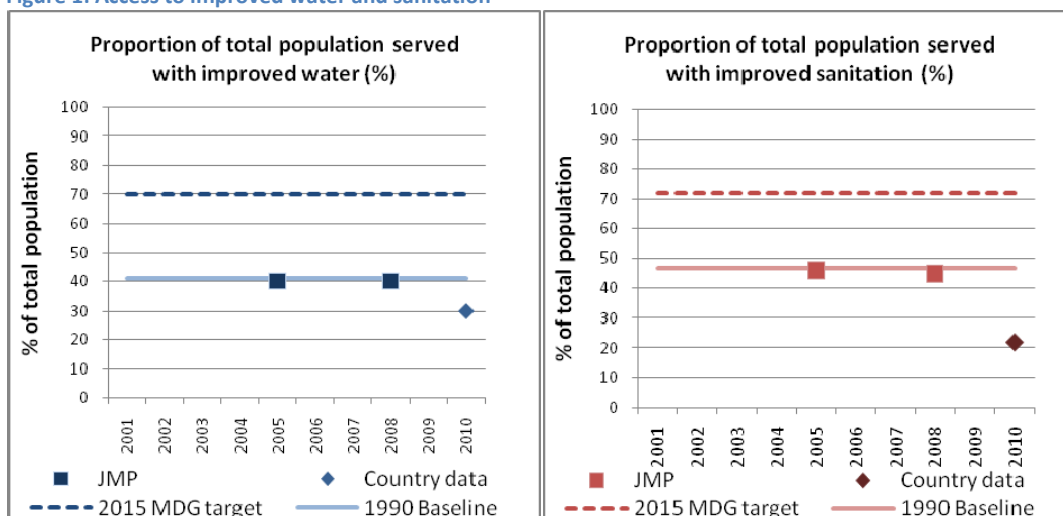
Headline issues

- The new Medium Term Development Plan 2011-2015 outlines ambitious targets for sanitation and water supply coverage in both rural and urban areas, however operational plans are yet to be developed and the absence of a specific national policy, strategy and investment plan for WASH contributes to an uncoordinated approach across the sector.
- Diarrhoea and WASH related illness are a leading cause of mortality in PNG, yet developing safe water and sanitation ranks low in government priorities compared to investment in other public health infrastructure such as hospitals.
- In the absence of government coordination, there is a lack of focus on sector coverage monitoring and few donor programs. Particularly in the rural sector, service delivery efforts do not match the scale of need, and are reliant on the presence of non-state actors (NSA) and an EU-funded program.
- Momentum in the rural WASH sector may be lost when the EU program ends in mid-2012. It is not yet clear if any donor will subsequently adopt coordinated financing of non-state actor activities in this subsector.

Coverage and WASH related health statistics

Coverage figures vary according to source and definition. According to WHO/UNICEF Joint Monitoring Program (JMP), Papua New Guinea (PNG) is considerably off track and will not meet the Millennium Development Goal (MDG) targets for improved water coverage or improved sanitation coverage (Figure 1). A slight decline in coverage for both indicators is evident in PNG since the JMP started in 1990, which may reflect a decline in service delivery since the sector was decentralised to local and provincial governments in 1995.^{1,2} PNG is the largest and most populated Pacific nation, and strong population growth may also have contributed to reversing trends in water and sanitation coverage. The population is expected to double between 2010 and 2030, further increasing demand for services.^{1,3} An ADB policy brief in 2008 indicates that the majority of the population have inadequate access to water and sanitation services both in terms of quantity and quality.⁴

Figure 1: Access to improved water and sanitation



Source: WHO/UNICEF Joint Monitoring Program (JMP) (2010) data for 2008.⁵ Country data from the Government of Papua New Guinea (GoPNG) Papua New Guinea Medium Term Development Strategy 2011-2015.⁶

There are significant disparities in coverage in urban areas compared to rural, where more than 85% of the population resides. Government figures place urban access to improved water at 60% compared with 20% for rural areas.⁶ JMP figures indicate slightly better access for both, though the urban/rural disparity is still marked, with 88% and 32% access to improved water in urban and rural areas respectively.² For sanitation, JMP figures place urban access at 66% and rural at 41%² while government data cites rural access to 'safe sanitation disposal options' at an extremely low 15% (with no figure provided for urban sanitation).⁶

Urban households receive treated and reticulated water (between 88-91% in 2008^{2,7}) from surface and groundwater sources. Of these only 60% of households received piped water on-site in 2007⁷ up from 43% in 2000. The remainder of urban households are located in squatter or peri-urban settlements and access reticulated water at public standpipes.⁷

SOPAC reported in 2007 that the most common source of drinking water for rural communities was unprotected sources, which could be polluted by upstream development.⁷ Coastal communities were said to depend heavily upon shallow groundwater wells for domestic consumption.⁷ The very low access to improved water supply in rural areas in PNG, which alone represents two-thirds of the total population in the Pacific, renders the regional average to levels comparable to least developed regions.²

The sanitation situation is critical in both urban and rural areas. JMP data places access to improved sanitation at 45% nationally, which is just below the regional average for the Pacific (48%).² In 2007, 67% of the urban population had access to improved services,² but only 20% are served by piped sewerage.⁷ In Port Moresby, sanitation infrastructure includes biological lagoons and a sewerage system, with wastewater treated and deposited offshore.⁷ In urban centres outside the national capital, many residents continue to rely on septic tanks or basic pit latrines with night soil collected and disposed of untreated into waterways or the ocean. In squatter settlements within and on the edge of urban settlements, sanitation facilities are typically poorly constructed pit latrines or drop toilets over water bodies.⁷ In rural areas, open defecation is very common or else waste is disposed of in crude pit toilets.⁷ Pit latrines and degraded septic tanks likely cause cross contamination in areas where the water table is used as a drinking source.⁷

PNG ranks at the bottom of Pacific countries for all WASH-related health statistics (see Table 1). The 2009 under-5 mortality rate in PNG stood at 69 per 1000 live births, an improvement from 90 in 1990 but insufficient progress to ensure that the country will meet the MDG by 2015.⁸ Diarrhoea and WASH related malnutrition account for 28% of the total 14,000 children under-five who die every year.⁹ In 2009 cholera re-emerged in PNG after an absence of almost 50 years,¹⁰ demonstrating the impact of lack of basic sanitation, safe water and hygiene practices on public health.

Table 1: Summary health statistics

Infant mortality (deaths per 1000 births) ¹¹	69
WASH-related DALYs (% of all DALYs) ¹²	14%
Total WASH related DALYs (Years) ¹²	237,326
Total WASH related deaths per year ¹³	6,164
WASH related proportion of deaths (%) ¹³	13%

Sources: World Bank and WHO as shown in endnotes

Finance trends

Based on the level of coverage reported in the 2010 JMP, Pacific Island Countries (PICs) in general will not achieve MDG targets of water and sanitation by 2015, and this is true of PNG.^{2,14} Regionally, investment

required to meet MDG goals over the period 2006-15 needs to be five times higher than what was expended between 1990 -2006.² It is difficult to determine the equivalent increase needed for PNG because current levels of government spending for the sector were unavailable for this review. However, based on an assessment of the global costs of achieving water and sanitation MDGs drawing on the average cost of an improved toilet and water supply, it has been estimated that PNG requires a total investment of US\$294M to meet its water and sanitation MDG targets, of which US\$194M (66%) is for sanitation.¹⁵ PNG is not poor relative to other PICs, benefiting from significant mining income¹⁶ and 2011 saw its largest fiscal budget yet.¹⁷ However, government commitments fall far short of the estimates needed to meet the MDGs.

The Government of PNG (GoPNG)'s Medium Term Development Strategy (MTDS) (2005-2010) identified 'Primary Health Care' as one of seven priority expenditure sectors for the government and within this priority was reference to the 'the provision of clean water and sanitation throughout the country.'¹ Under the Environmental Health program, the MTDS 2005-10 committed US\$83,000 per year for recurrent water supply and sanitation expenditure and a further US\$210,000 per year for development of new programs in water supply and sanitation.¹ An additional US\$1.12M per year was identified for developing health promotion activities and this may include hygiene and handwashing programs.¹ Water and sanitation infrastructure was not included under the financing mechanism for Priority 1: Infrastructure Rehabilitation and Maintenance.¹ Water supply and sanitation received allocation of funds as a means of disease prevention, in contrast to other infrastructure sectors that secured significant capital and ongoing investment (e.g. US\$8.2M in annual recurrent funding for urban hospitals and US\$1.4M and US\$4.9M in annual development funding for urban and rural hospitals).¹

The new Medium Term Development Strategy (MTDS) 2011-15⁶ establishes targets for extending water supply and sanitation coverage in both urban and rural areas, indicating investment requirements of US\$118M over the period 2011-15, beginning with an annual investment of US\$18M until 2013 before increasing dramatically to US\$40M in 2014 and falling back to US\$22M in 2015.¹⁸ Responsibility for coordinating investment lies with PNG Water Board (now 'Water PNG') and the Independent Public Business Corporation (IPBC).⁶ Lack of funding and delays in implementation are identified in the MTDS as risks for all water and sanitation deliverables outlined in the plan.⁶

The recently developed National Health Plan identifies a need for US\$9M per year from 2011-2020 to meet its rural water supply objectives and reduce the incidence of waterborne disease.⁹ It is not clear if these funds are met in the PNG budget.

The GoPNG 2010 budget included a large contribution to the District Services Improvement Program (DSIP) (US\$73.5M) which is a discretionary fund for Open Members of Parliament to top up funding shortfalls on projects and programs designed and executed by Provincial Governments.¹⁹ For each district, US\$430,000 of the DSIP is earmarked for WASH programs, however, there has been a lack of monitoring to identify if these funds were spent.**Error! Bookmark not defined.**

The PNG-EU Rural Water Supply and Sanitation Programme (RWSSP) is the only significant water and sanitation program for rural WASH,³ providing financing for the construction of water systems, linked closely to sanitation and hygiene education and technical, management and community development training. The RWSSP works with the Department of Health as its main counterpart.³ This program disbursed US\$5M to 28 'non-state' actors (NSAs) including non-governmental organisations (NGOs), community-based organisations (CBOs), churches and communities from 2006-2008 increased to over US\$18M over 2009-2012,⁶ and accounts for approximately 80% of NGO WASH funding in PNG.**Error! Bookmark not defined.** Despite being the only significant rural program,

the RWSSP still only reaches a very small proportion of the rural population, **Error! Bookmark not defined.** indicating significant need for further investment in rural WASH.

PNG was not included in the WHO 2010 Global Annual Assessment of Sanitation and Infrastructure (GLAAS) assessment of adequacy of funding. Future inquiry in this area would be beneficial for identifying levels of investment necessary to approach the MDG water and sanitation targets.

Sector governance

The Public Health Act allocates responsibility for drinking water quality and septic tank regulations to the Department of Health, which oversees the sector. The National Health Plan 2011-2020 mentions water supply and sanitation objectives to reduce the incidence of diarrhoeal disease, but does not identify a process to ensure progress in this area.⁹

PNG's key previous planning document, the Medium Term Development Strategy (2005-2010), includes passing reference to water and sanitation infrastructure under the category of basic services that will contribute to poverty alleviation and economic growth.¹ The recently released MTDS for 2011-15 includes greater emphasis on water and sanitation, establishing targets for urban and rural coverage and school water and sanitation,⁶ however it is likely that these targets are unrealistic and operational plans are yet to be developed to guide efforts and establish agency responsibilities.²⁰ To date, the WASH sector has been characterised by overlapping and contradictory responsibilities assigned to different government departments and a general lack of coherence.³

After a period of inactivity, the multi-departmental National Water and Sanitation Committee (WasCom) has recently been re-established as 'WASHCOM' with support and mentoring provided by RWSSP and WHO.²⁰ The previous committee included the Department of National Planning and Rural Development (DNPRD), Department of Environment and Conservation, National Disaster and Emergency Services, WHO, UNICEF, AusAID, EU, the PNG University of Technology and numerous other government departments and NGOs.⁷ The new WASHCOM has potential to play a sector coordination role. A Terms of Reference is currently in development, and the committee intends to meet monthly.²⁰

Subsector governance

Urban water and sanitation

Water PNG (known as the PNG National Water Board until December 2010) has responsibility to 'ensure provision of safe, reliable and sustainable water and sanitation services' in urban areas outside the capital district.²¹ As such, Water PNG prioritises service provision to provincial capitals with the exception of Goroka which is managed by Goroka Urban Authority.^{7,20} Urban areas typically operate on metered water usage with no community input or ownership.²² The distinction between small towns and villages has created confusion for water and sanitation service delivery and led to a duplication of responsibility. A review undertaken in 2006 reports that previously the Water Board held responsibility for service provision in district town centres of less than 1,000 inhabitants, but that some of this responsibility had been then delegated to the Department of Health.²² According to this review, this shift, combined with funding constraints, means the Water Board at that time serviced only three of 89 district towns.²²

In Port Moresby, reticulated water and sanitation provision is managed by state owned company Eda Ranu created under the 1996 National Capital District Water Supply and Sanitation Act. Infrastructure is upgraded

through a Build Own Transfer (BOT) partnership with the private sector. In 2006, Eda Ranu serviced 250,000 people.²² The Goroka Urban Authority provides reticulated water in Goroka.⁷

There are concerns related to Water PNGs capacity to effectively manage urban supply. SOPAC reported in 2007 that the then National Water Board did not receive sufficient information from the Water Resource Management Branch to understand the state of groundwater supplies and was therefore unable to implement precautionary management strategies.⁷

Rural water and sanitation

Rural water schemes are typically community owned and operated with no charges levied.²² At present, it is unclear which government agency has overall responsibility for rural water.²³ Under the Water Sanitation Act Water PNG has responsibility for rural as well as urban areas,²³ but while their role in urban centres is to 'provide' services, for rural areas they only 'promote' water supply and sanitation.²¹ As a state-owned enterprise with cost-recovery and profit drivers, Water PNG is unable to operate in rural areas unless specifically funded to do so.²³

The National Health Plan 2011-2020 positions the DoH to plan and coordinate safe community water supplies and waste disposal systems, however there is little evidence of this in practice as yet,⁶ and DoH is considered to be reluctant to play a formal lead role for the sector.²³ The Department of National Planning and Rural Development (DNPRD) also plays a role, and together with the EU jointly drafted the feasibility study for rural water supply and sanitation programming,⁶ however there are no national guidelines for implementing rural WASH²³ and sector leadership remains uncertain.

In the absence of government leadership, non-state actors (NSAs) have been the primary implementing agencies in the rural WASH sector.²³ A 2004 study conducted by the EU's Rural Water Supply and Sanitation Programme (RWSSP) classifies the rural sector as donor dependent and reports that the government is constrained by lack of human resources and financing.²² Under the country's decentralisation act or Organic Law, service provision is devolved to provincial and local level governments. These governments are for the most part dependent on the national government for financial allocations.²² Introduction of the Organic Law has coincided with a decline in on-ground service levels and the GoPNG in 2004 noted that this was in part due to confusion over roles and lack of skilled personnel and institutional capacity.¹ Similar to other PICs, PNG's strong clan-based culture presents challenges for traditional models of decentralised service provision, with interwoven social, cultural and legal governance structures sometimes impeding the role of an independent regulator at the local and provincial level.^{2,3,4}

The dominance of clan-based systems and decentralisation under the Organic Law has also created an environment that lacks support for civil society participation.²² AusAID and the EU have both implemented programs designed to strengthen state-civil society partnerships, including in the WASH sector. AusAID's Community Development Scheme (CDS) aimed to build capacity of non-state actors (NSAs) in the WASH sector, administering 33% of its small grants from 2001 to 2007 to WASH related initiatives³ although there is evidence that village committees formed under this program have disbanded shortly after.²² Successors to the CDS including the Democratic Governance Transition Program and more recently Strongim Pipol, Strongim Nesen provide block grants to communities for various activities including WASH.²³

Support for civil society participation in rural WASH governance is particularly needed to ensure meaningful participation of women. Although the primary users of water, a review in 2007 reports that women are typically

excluded from decision making processes in rural PNG and when permitted to attend meetings, rarely given the opportunity to have their perspectives heard.²²

Health and hygiene

For rural areas, the DoH in 2007 was reported to have prioritised disease control and hospital construction over water services and sanitation despite the high incidence of water related diseases.²² The DoH ‘Healthy Islands Program’ promotes better hygiene, improved sanitation and proper solid waste disposal throughout the country. SOPAC indicated in 2007 that this program could be better supported and integrated with national agencies, provincial and local level governments as well as NGOs and CBOs.⁷ UNICEF and WHO provide limited direct assistance on hygiene and health promotion activities.²²

Climate change and water resources

Pacific Islands including PNG are increasingly vulnerable to climate change (Table 2) and there is a need for surveys that examine the relationship between levels of improved service provision and health, the environment and water resources in the future. For example, untreated sewage may contaminate local fisheries and enter the food chain, and septic tanks and latrines that are below the water table may threaten already scarce groundwater supplies. Rural parts of PNG are particularly at risk of water insecurity during El Niño Southern Oscillation (ENSO)-induced drought conditions.²⁴ Climate change is expected to lead to sea level rise and possible increased frequency and intensity of severe weather events in PNG,²⁴ and this should be taken into account in the construction of all new water and sanitation infrastructure. Adaptation and coping strategies for climate change are outlined in the Pacific RAP.¹⁴

According to the Pacific WASH coalition in 2009, adaptation and coping strategies for climate change have been outlined in the Pacific RAP.¹⁴ The Pacific Regional Action Plan on Sustainable Water Management (Pacific RAP) stresses the need for Integrated Water Resource Management (IWRM) as a key adaptation strategy.¹⁴

Under the Environment Act 2000, the Office of Conservation and Environment is responsible for executing environmental legislation, including the management of water resources.²² GoPNG has also established an Office of Climate Change and Development (OCCD), which aims to implement the Interim Action Plan for Climate Compatible Development.²⁵ The 2010 Action Plan outlines PNG’s national strategy for mitigation and adaptation activities.

Table 2: Summary status of water resources and vulnerability

Renewable water (ML/population) ²⁶	122
Overall Climate Vulnerability factor 2010 ²⁷ (on scale of <i>Acute, Severe, High, Moderate, Low</i>)	High
Overall Climate Vulnerability Factor 2030 ²³ (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>)	At risk

Donor environment

In recent years the EU has been by far the largest donor in the sector³ with the only coordinated program for WASH delivery in PNG, reaching only a very small proportion of the rural population. The lack of a national policy or focus for the sector complicates donor involvement however, as there have been no national priorities with which to align WASH funding.⁶

The other notable donor program in recent years is the ADB financed Provincial Towns Water Supply and Sanitation Project completed in 2008. This project was intended to cover the capital towns of six provinces,

provided sector policy support and capacity building within Water PNG,²⁹ though only one town water supply and one town sewerage system was completed and the policy support component did not proceed as planned.²⁹

In the absence of adequate government services, NSAs play a role in rural WASH service delivery, funded by the RWSSP since 2006. Phase 2 of the RWSSP is scheduled for completion in June 2012. As of November 2011, no donor has yet planned to continue the work of the RWSSP beyond 2012.⁶

There are between 20-40 NSAs who currently play the role of primary service delivery providers in the rural WASH sector^{3,22} including a number of large International NGOs (INGOs), Churches and a limited number of national NGOs and CBOs.³ INGOs include World Vision, Oxfam, WaterAid, Save the Children, Live & Learn Environmental Education and Child Fund, most of which are active throughout the provinces and commonly work with local partners.³ AusAID also finances some WASH projects including a World Vision implemented initiative in Bougainville.⁶ According to a review in 2006, coordination between NSA actors is haphazard and design of WASH infrastructure varies greatly from technically advanced systems (drilling rigs for boreholes) to low-maintenance solutions (gravity fed).²² Finally, many mining companies undertake WASH projects as part of their agreement with the government, and these are often not reflected in available documentation.³⁰

PNG is at risk of quickly losing capacity and momentum in the water sector should NSA financing diminish.⁶ The RWSSP notes that approximately one-third of the NSAs have skilled technical personnel on permanent staff, whilst the remainder recruit staff as funds become available. This renders most NSAs dependent upon project funding and necessitates frequent retraining of staff, although NSA capacity in approaches such as Community Led Total Sanitation and project planning and budgeting have all been enhanced since the RWSSP began.⁶ A 2006 review reported that many NSAs are also hampered by security issues including theft of equipment integral to operation such as generators, pumps and tools and personal security risks faced by personnel.²²

Future funding for the sector may be provided through the EU's global fund to promote MDG achievement with a proposal submitted for 2011-2015 including focus on sector governance and the implementation of a water and sanitation policy.⁶ This program has a proposed start date in the second half of 2012.⁶

The Pacific WASH coalition collaborates on WASH projects and knowledge sharing. The coalition includes: Foundation of the Peoples of the South Pacific International (FSPI), the Fiji School of Medicine (FSMed), Live & Learn Environmental Education (LLEE), WHO, UNICEF, International Federation of Red Cross and Red Crescent Societies (IFRC), UN-HABITAT and SOPAC.¹⁴ Coalition members active in the WASH sector in PNG include SOPAC, WHO, FSPI, UN-HABITAT, the French Red Cross and FSMed.

Sector monitoring

There is little information available on WASH sector monitoring undertaken by the DoH or otherwise. The relatively recent development of government targets means that beyond the MDGs there have been no sector-specific outcomes against which to monitor and evaluate progress.

The Water Resource Management Branch (WRMB) within the Department of Environment and Conservation (DEC) manages PNG's national water resources and is responsible for river monitoring and groundwater allocation.²⁴ A review in 2006 reported that the WRMB did not have adequate resources to support sufficient river monitoring stations, compromising PNG's ability to model the effect of drought conditions on freshwater availability.²² In 2009 there were 10 functioning river monitoring stations, down from 130 in 1999, highlighting the need for programs to address PNG's hydrological monitoring capacity and understanding of the state of the national water resources in order to better prepare for drought and climate change.²⁴

The DoH is required to monitor potable water for compliance with drinking water quality standards however there are many challenges to be overcome. SOPAC reported in 2007 that in rural areas data was not collected routinely due to the high costs and logistics of accessing remote locations.⁷ They report that under the environmental permitting system of the Environment Act 2000, large companies involved in natural resource extraction or infrastructure or industrial activities are required to collect hydrological and water quality data and periodically submit it to the DEC for centralised data storage. In the event of pollution complaints (e.g. from large scale industrial activity) DEC can undertake compliance monitoring, but the costs (including hosting the DEC official) are covered by the developer in question, which creates issues of integrity around DEC as a regulator.⁷

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



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