

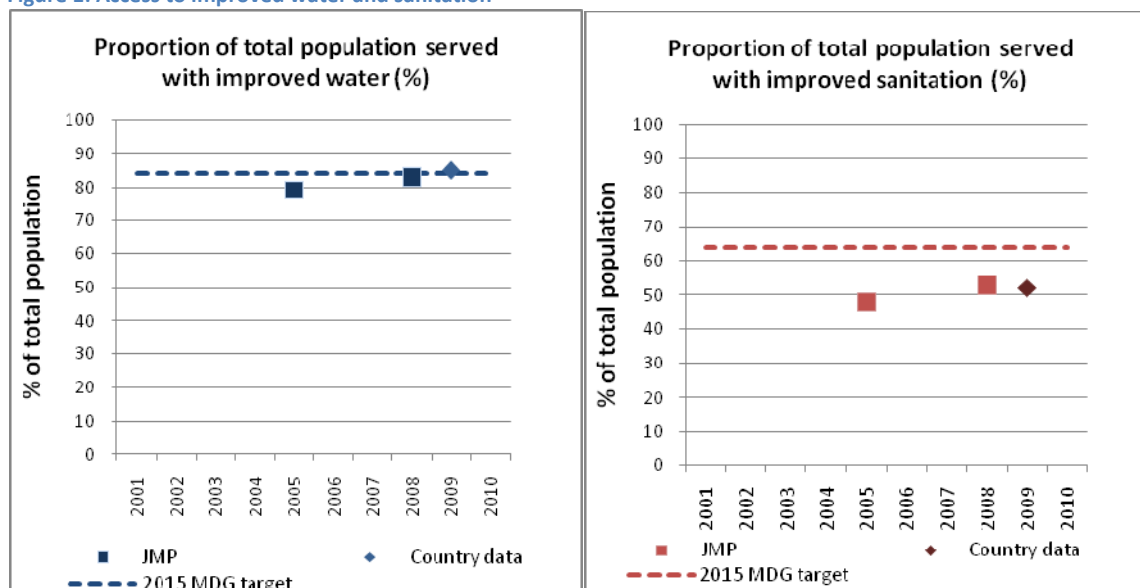
### Headline issues

- Water and sanitation, particularly for rural areas, have been absent from high level planning in Vanuatu for some time. Sanitation especially has particularly been neglected.
- Government agencies responsible for water supply planning and implementation face resource constraints in terms of both skilled staff and budget.
- The sector depends on the timely adoption of the National Water Resource Strategy to give legal status to the country's peak water body, encourage cross-sectoral coordination and spur the formation of the Department of Water. Currently the sector is highly fragmented.

### Coverage and WASH related health statistics

Data on coverage in Vanuatu is recognised to be unreliable. According to WHO/UNICEF Joint Monitoring Program (JMP) data for 2008 (Figure 1), 83% of Vanuatu's population have access to improved water, comprising 79% access for rural areas and 96% access for urban areas. Overall, 53% of the population are reported access to improved sanitation, including 48% in rural and 66% in urban areas.<sup>1</sup> JMP's national coverage figures generally correlate with findings from the 2009 National Population and Housing Census but the government data disaggregates differently, with much lower rural estimates.<sup>2</sup> Both sets of figures indicate that Vanuatu is likely to meet its 2015 MDG targets, but the data is widely believed to be unrepresentative, with varying interpretations of 'improved' supply used by surveyors.<sup>3</sup> National trends also obscure the large differences in urban and rural performance.<sup>3</sup> Whilst Vanuatu is performing above the Pacific average for both targets<sup>4</sup> the aggregate figures do not reflect the true situation in rural areas where approximately 80% of the population resides.<sup>5</sup> Here, a recent review indicates that improved rural water supply coverage actually declined during the 1999-2006 period from 69% to 65%.<sup>3</sup>

Figure 1: Access to improved water and sanitation



Source: WHO/UNICEF Joint Monitoring Program (JMP) (2010) data for 2008<sup>1</sup> and the Vanuatu National Census (2009)<sup>2</sup>

According to the National Vanuatu Statistics Office, in 2009 approximately 98% of urban households received piped water (50% of which are private connections and 50% are shared connections),<sup>2</sup> however actual figures are likely lower and the water supply utility UNELCO places urban coverage at 80%.<sup>6</sup> Rural water supply is sourced groundwater, surface water or rainwater catchments, depending on the geomorphology of the specific island. In addition to traditional sources of human contamination, rural communities' water supplies are compromised by exposure to potential contaminants from volcanic ash and gas emissions.<sup>7</sup> The migration of people into the islands' interiors also threatens the quality of surface water supplying downstream coastal villages.<sup>8</sup>

The majority of urban households use latrines that flush to septic tanks – although the Government of Vanuatu (GoV) reports that in 2009 a significant proportion of urban households utilised shared facilities (22%)<sup>2</sup> which are not classified 'improved' under the MDG standards. It is not clear whether the government includes shared toilets in its assessment of improved facilities. Almost 50% of rural households have a pit latrine,<sup>2</sup> which according to a UNICEF review, normally lack a slab or are open pit.<sup>9</sup>

According to UNICEF, 71% of schools have adequate access to an improved water supply however no data is available for sanitation facilities in schools.<sup>9</sup>

WASH related health statistics show improvement in the sector but there is room for progress. Compared with other Pacific Island Countries (PICs), according to UNICEF, Vanuatu has the third highest incidence of diarrhoeal disease.<sup>9</sup> However according to the World Bank, as compared with other PICs Vanuatu has a relatively low infant mortality rates and according to World Health Organisation (WHO), also a relatively low WASH related disability affected life years (DALYs) (Table 1). Sewage pollution is considered one of the highest contributing factors to water related diseases.<sup>10</sup>

**Table 1: Summary health statistics**

Infant mortality (deaths per 1000 births) <sup>11</sup>	16
WASH-related DALYs (% of all DALYs) <sup>12</sup>	7%
Total WASH related DALYs (Years) <sup>12</sup>	2,584
Total WASH related deaths per year <sup>13</sup>	62
WASH related proportion of deaths (%) <sup>13</sup>	5%

Sources: World Bank and WHO as shown in endnotes

## Finance trends

Vanuatu's gross domestic product (GDP) has declined steadily and in 2006 was below the level it was at in the 1980s.<sup>14</sup> The government's limited resources are allocated based on priorities nominated in its key planning document the *Priorities and Action Agenda (PAA) 2006 – 2015*. Water and sanitation are not mentioned in this document and were excluded from the more recent Budget Priorities for 2011.<sup>3</sup> Current resourcing levels for departments active in the sector are inadequate to nominal (see Subsector governance section below) and reflect the low priority government gives to the sector.<sup>3</sup>

Vanuatu is not included in the UN-Water Global Annual Assessment of Sanitation and Drinking-Water (GLAAS), which include indicators for adequacy of funding. Future inquiry in this area is needed to clarify the sector needs versus availability of funding.

## Sector governance

The WASH sector does not appear to be a government priority – it is not mentioned in the 2011 Budget Priorities, nor is it present on the GoV website. A recent review reports that there are minimal staff and budget allocations,<sup>3</sup> which also supports this view. The 2009 National Census recorded a total of 11 people nation-wide who identified themselves as part of the ‘water supply, sewage, waste management, and remediation’ industry,<sup>2</sup> but this figure would not include those who work across several sectors or do not see WASH as the primary focus of their job.

Sector reform is guided by the *National Water Strategy for Vanuatu (NWS) 2008-2018* which follows the principles of integrated water resource management (IWRM).<sup>15</sup> Vanuatu’s National Water Resource Advisory Committee (NWRAC or NWAC) is the nation’s peak water body and the main mechanism for cross-sectoral coordination of the sector towards IWRM, although it has a low profile and meets infrequently.<sup>15</sup>

Reforms include institutional restructuring of the sector to re-locate water sector responsibilities from the Department of Geology, Mines & Water Resources (DGMWR) to a distinct Department of Water (DoW). The future DoW would oversee water resource management as well as urban scheme management and the sanitation subsector. The strategy has been approved by the Council of Ministers but as of 2011 had not been made into policy, and therefore has no legal status.<sup>15</sup> Consequently the DoW does not yet exist.

The *Water Resources Management Act (WRMA) 2002* provides a legal basis for the rights to access, use and management of water resources in Vanuatu, including the establishment of water protection zones.<sup>15</sup> In practice few of these initiatives have been implemented.<sup>3</sup>

Vanuatu is a signatory of the Pacific framework for action on drinking water quality and health, signed in 2005.<sup>9</sup> 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).<sup>9,16</sup>

## Subsector governance

### Urban sanitation

There is no specific legislation, overall coordination or global plan for sanitation in Vanuatu, reflected in the absence of leadership for this subsector.<sup>15</sup> The sanitation subsector is conspicuous in its absence from the Government’s key planning document *Priorities and Action Agenda (PAA) 2006 – 2015*, overlooked in both the health and infrastructure and utilities sections.<sup>14</sup> Under the NWS, the newly-formed DoW would take overall responsibility for sanitation, but this is awaiting approval from the GoV.

Currently the DGMWR and Department of Public Health (DPH) both implement scattered sanitation activities. The Municipality of Port Vila is responsible for the provision of services in the Municipal area in relation to safeguarding public health but in 1998 was reported to be under resourced.<sup>17</sup> At that time there was only one private company operating in Port Vila able to undertake desludging of onsite septic facilities,<sup>17</sup> the current status is unclear.

A Sanitation Master Plan for Port Vila was developed by the ADB in 1998, recommending the construction of a formal sanitation system by the Department of Public Works (DPW),<sup>17</sup> but this was never implemented.<sup>15</sup> The subsequent ADB-funded Port Vila Urban Development Project (PVUDP) aims to develop another master plan

and investment program for sanitation and drainage in Port Vila and surrounding peri-urban areas for the 2010-15 period.<sup>15</sup>

### Urban water

The lead government agency for urban water supply is the Ministry of Lands and Natural Resources, Geology, Mines and Water (MLNR) made operational through the DGMWR.<sup>3</sup> Water supply to Port Vila is provided under a monopoly concession with French-owned company UNELCO, the only private water utility in the Pacific.<sup>18</sup> Vanuatu has the lowest non-revenue water rates of the Pacific Island Countries, reduced from 50% in 1994<sup>15</sup> to 24% in 2010 compared to a regional average of 50%,<sup>19</sup> this is attributed to private sector management of water supply in Port Vila.<sup>18</sup>

The Department of Public Works (part of the Ministry of Infrastructure and Public Works Utilities) was reported in 2007 to manage water supply in smaller towns and urban areas e.g. Luganville, Isangel and Lakatoro.<sup>7,8</sup> The NWS proposes to transfer urban water management from the DPW to the DoW once it is established.<sup>3</sup>

The Ministry of Health (MOH) is responsible for water quality surveillance of all water supply systems, as articulated in the 1994 Public Health Act.<sup>20</sup>

Urban water operators are regulated by the Utilities Regulation Authority (URA) within the Ministry of Finance and Economic Management, and jointly funded by AusAID and the World Bank.<sup>3</sup> The URA provides oversight to UNELCO's water scheme in Port Vila and also regulates DPW's urban water provision activities. DPW and UNELCO are members of the NWAC,<sup>3</sup> but the regulator's membership status is unclear.

### Rural sanitation

As for urban areas there is no clear authority responsible for rural sanitation. As stated above, Municipal and Provincial Councils have responsibilities in the general area of health and sanitation.<sup>21</sup> RWS now include sanitation aspects in their rural water supply projects.<sup>15</sup>

### Rural water

Rural water supply is the responsibility of the Rural Water Supply (RWS) Section in DGMWR.<sup>8</sup> A recent review reports that RWS has a full time staff of nine – with six based in the provinces and only three in the Head Office.<sup>3</sup> This resource constraint leads to bottlenecks at the project design stage. RWS has quality standards for construction of water supply – but these are not supported by legislation or policy and therefore are not enforceable, it is also unlikely that those constructing water supplies are aware of the standards, including those working within RWS.<sup>21</sup>

The installation of rural water supply systems is normally financed by bilateral donors through the Government Investment Program (GIP). Projects are designed by RWS and submitted to the GIP for funding to be implemented by DGMWR. The RWS/DGMWR's capacity is limited to providing six such projects per year, so many donors and non-governmental organisations (NGOs) fill the gap by providing rural water infrastructure through individual schemes outside of these government arrangements.<sup>15</sup> The ongoing maintenance and operation of rural water supply systems is undertaken by communities and in theory financed by user fees collected by the village water committees, although according to SOPAC the success of this arrangement varies between villages.<sup>21</sup> These committees could be better involved in the planning and design stage to improve the rate of success,<sup>8</sup> and in the long-term, external support is required to ensure sustainability.

The NWS is premised on the fact that each of the six provinces has its own water advisory committee to be represented on the NWAC.<sup>3</sup> Currently only one province has a comparable committee (SANMA) and another has a committee that restricts itself to groundwater and surface water management (Tagabe River). These provincial committees do not yet have legal recognition under the Water Resources Management Act (WRMA), unlike the village water committees which are recognised.<sup>3</sup>

### Health and hygiene

The Ministry of Health (MoH) plays a role in hygiene promotion with public education campaigns around water-borne diseases,<sup>15</sup> though how this is operationalised is unclear. In 2006 the MoH and Peace Corps linked water quality management and disaster management to health in the national Village Water Committee training programme.<sup>21</sup> Vanuatu celebrates World Water Day with hygiene promotion activities and water quality testing with the focus shifting to a different island each year. Further information on the health and hygiene subsector was not located during the time allocated to this review.

### Climate change and water resources

Table 2 summarises the status of Vanuatu with respect to climate and water resource indicators. Vanuatu is located in the centre of the South Pacific’s Cyclone Alley and is the fourth most disaster prone country in the world.<sup>21</sup> Climate change is expected to increase the frequency of tropical cyclones and associated flooding and landslides,<sup>22</sup> with the country scoring the highest vulnerability rating for both 2010 and 2030 (see Table 2). The World Bank also ranks Vanuatu as one of the countries with the highest exposure to multiple hazards.<sup>15</sup> Climate change poses a significant threat to the Vanuatu WASH sector in terms of increased drought and unpredictable rainfall patterns and saltwater intrusion to groundwater sources.<sup>22</sup>

The National Disaster Management Office has previously provided emergency desalination plants to temporarily provide water to communities whose rainwater collection capacity has been destroyed by cyclone.<sup>21</sup>

A 2011 review highlights capacity constraints in the DGMWR – two of four staff had taken long term leave, leaving only two staff to coordinate all of the GoV’s water resource management activities.<sup>3</sup> Over the last two decades the Vanuatu Meteorological Service has suffered a steady decline in resources. This reduces the service’s ability to provide accurate forecasts and understanding future risks to the country’s freshwater supply.

**Table 2: Summary status of water resources and vulnerability**

Renewable water (ML/population) <sup>23</sup>	Not available
Overall Climate Vulnerability factor 2010 <sup>24</sup> (on scale of <i>Acute, Severe, High, Moderate, Low</i> )	Acute
Overall Climate Vulnerability Factor 2030 <sup>24</sup> (on scale of <i>Acute, Severe, High, Moderate, Low</i> )	Acute
Environmental Vulnerability Status <sup>25</sup> (on scale of <i>Extremely vulnerable, Highly vulnerable, Vulnerable, At risk, Resilient</i> )	Vulnerable

### Donor environment

Several bilateral and multilateral donors are active in the WASH sector in Vanuatu. New Zealand has been supporting the Vanuatu WASH sector for many years, including assisting the Government of Vanuatu in preparation of the Vanuatu National Water Strategy (NWS) 2008-2018.<sup>6</sup> NZAID is now supporting DGMWR in the development of an Implementation Framework for the NWS through a five-year program (commencing in mid-2011).<sup>3,15</sup>

Other donors active in the sector include JICA, the ADB and AusAID. JICA has supported small rural water supply projects in some 26 small villages over the past 14 years.<sup>6</sup> The ADB is working on the Urban Development Project, including an Urban Sector Master Plan for Port Vila and an investment project with a focus on improved storm drainage and sanitation facilities.<sup>6</sup> The Utility Regulatory Authority (URA) of Vanuatu has received financial assistance from AusAID.<sup>6</sup> AusAID is also currently supporting three NGOs (Live and Learn, Red Cross and ADRA), in WASH work through the Civil Society WASH Fund 2009-2011. The EU is a major donor in Vanuatu but does not mention water or sanitation in its 2008-2013 Country Strategy, which is based on government priorities.<sup>26</sup>

In terms of donor coordination, there is currently no formal mechanism for coordination or harmonisation in place. The DGMWR is reported to have insufficient capacity to control external water and sanitation initiatives.<sup>15</sup> The high level of donor interest potentially strains already stretched senior government staff – in 2010 there were almost 100 missions from donors and consultants.<sup>3</sup>

UNICEF Pacific's Health and Sanitation programme (2008-12) includes WASH activities in the Solomon Islands, Kiribati and Vanuatu focusing on the provision of water and sanitation facilities for schools and neighbouring communities.<sup>9</sup> Oxfam NZ also has a number of WASH activities incorporated into this program.

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.<sup>16</sup> Most coalition members are active in the WASH sector in Vanuatu.

The Small AID donors (SAID) committee is an informal committee of small aid international donors that fund and implement rural projects. SAID was developed to encourage information sharing and reduce duplication of work and they occasionally implement joint projects. Approximately 25% of members work in the sector.<sup>15</sup>

**Water resource management:** SOPAC, funded by the UN's Global Environment Fund (GEF), launched its *Sustainable Integrated Water Resources and Wastewater Management Project in PICs* in Vanuatu. This program was designed to introduce concepts of IWRM into governance structures at the national and local level.<sup>21</sup> The SOPAC-WHO Pacific Water Safety Plans Programme began in four Pacific countries in late 2005, including Vanuatu, under AusAID funding. The Vanuatu programme aimed to help stakeholders shift their focus from water supply coverage to water supply quality.<sup>20</sup>

Other NGO activities have also been supported in water resources management. AusAID supported local NGO *Wan Smol Bag* (WSB) with \$2.9M in core funding from 2007-11. This funding has supported community education programs and solid waste management campaigns and services towards cleaning up the Tagabe River.<sup>5</sup> Local NGO, Live & Learn Environmental Education (LLEE), promotes catchment management in Sarakata catchment (the main water source for the second largest urban centre Luganville) and undertook water quality management with youth groups and schools in partnership with the IWC and AusAID.<sup>27</sup>

## Sector monitoring

Data collection systems in the Vanuatu WASH sector often overlap and duplicate, reflecting an inefficient use of scarce resources and the fragmentation of skills across departments. UNELCO and the DPW collect information on water delivered and used through their reticulated systems.<sup>21</sup> Water quality analysis is undertaken by the DGMWR and the DPH, but data and analyses are not shared.<sup>3</sup> UNELCO also collects data but does not share it with the government.<sup>3</sup> There are six existing water analysis laboratories in Port Vila and Luganville, but a 2011 review shows that only the UNELCO-operated one is still fully operational.<sup>3,7</sup>

The Vanuatu Meteorological Society (VMS) is responsible for setting standards to guide water resource management based on its rainfall monitoring.<sup>3</sup> DGMWR, PWD and the Energy Unit all undertake their own rainfall assessments but do not share data.<sup>3</sup> Overall VMS is very well staffed compared to other government departments<sup>3</sup> however there are reports that the quality of VMS data collection has suffered due to a decline in resources since the mid 1980s.<sup>14</sup>

### Acknowledgements

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<sup>2</sup> Vanuatu National Statistics Office (VNSO)(2009) 2009 National Population and Housing Census. Basic Tables Report Volume 1. Government of Vanuatu. Available at [www.vnso.gov.vu/images/stories/2009\\_Census\\_Basic\\_Tables\\_Report\\_-\\_Vol1.pdf](http://www.vnso.gov.vu/images/stories/2009_Census_Basic_Tables_Report_-_Vol1.pdf)

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<sup>4</sup> World Health Organisation (WHO) (2008) *Sanitation, hygiene and drinking-water in the Pacific island countries: converting commitment into action*.

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<sup>6</sup> Personal communication, Overbeek, J., Pacific Infrastructure Advisory Centre (PIAC) within Pacific Regional Infrastructure Facility (PRIF), August 2011.

<sup>7</sup> Sullivan, C.A. and Guglielmi, F. (2007) *Pacific Island Water Resources: An Overview of East Timor, Kiribati, Solomon Islands, Tuvalu and Vanuatu*. Oxford University, December 2007.

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<sup>9</sup> UNICEF (2010) *Water, Sanitation and Hygiene (WASH): Kiribati, Solomon Islands and Vanuatu. UNICEF Pacific Health and Sanitation Programme 2008-2012 Mid-Term Review*.

<sup>10</sup> Greenpeace (1994) *Sewage pollution in the Pacific and how to prevent it*. Greenpeace Pacific, Suva, Fiji.

<sup>11</sup> The probability per 1,000 that a newborn baby will die before reaching age five (2009). Source: World Bank Open Data from the Inter-agency Group for Child Mortality Estimation.

<sup>12</sup> 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](http://www.who.int/quantifying_ehimpacts/publications/saferwater/en/index.html).

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- <sup>13</sup> Source: 2004 update of the Table 1 and Annex of the publication 'Safer water, better health', by Prüss-Ustün et al., WHO, Geneva, 2008 as above.
- <sup>14</sup> Government of Vanuatu (GoV) (2006) *Priorities and Action Agenda 2006 - 2015, Department of Economic and Sector Planning*. Ministry of Finance and Economic Management. June 2006. Available at [http://www.aid.gov.au/publications/pdf/vanuatu\\_agenda.pdf](http://www.aid.gov.au/publications/pdf/vanuatu_agenda.pdf)
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- <sup>22</sup> Global Facility for Disaster Reduction and Recovery (GFDRR), World Bank & Sopac. (2009) *Reducing the Risk of Disasters and Climate Variability in the Pacific Islands: Vanuatu Country Assessment*. GFDRR, The World Bank and SOPAC.
- <sup>23</sup> Renewable Freshwater Supply estimates (km<sup>3</sup>/yr) (2006) from Pacific Institute ([www.worldwater.org](http://www.worldwater.org)), converted to ML per head of population using JMP population estimates. Data should be used with caution and treated as 'order of magnitude'. Freshwater estimates (2006 updates) were made at different periods from different sources. 2008 JMP population data used for consistency with other calculations.
- <sup>24</sup> Source: Climate Vulnerability Monitor 2010 <http://daraint.org/climate-vulnerability-monitor/climate-vulnerability-monitor-2010>. Countries are classified according to: ACUTE+, ACUTE, ACUTE-, SEVERE+, SEVERE, SEVERE-, HIGH+, HIGH, HIGH-, MODERATE, LOW. For information on included datasets and methodology for aggregation and categorising, see [http://daraint.org/wp-content/uploads/2010/12/CVM\\_Methodology.pdf](http://daraint.org/wp-content/uploads/2010/12/CVM_Methodology.pdf).
- <sup>25</sup> Source: Environmental Vulnerability Index 2004 developed by SOPAC, UNEP and partners <http://www.vulnerabilityindex.net/>. Countries are classified according to: Extremely vulnerable, Highly vulnerable, Vulnerable, At risk, Resilient.
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