



Regional Report

Regional Process Commission

Region: Asia-Pacific

ANNEX

Oceania & Pacific Sub-Region

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Oceania & Pacific

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This report covers Australasia and Pacific Sub-region. While it introduces the overview of each sub-region, the discussion about the required solutions will particularly focus on Pacific Sub-region, as it is getting further challenges to secure safe water supply and basic sanitation because of their uniqueness.

Overview of Australasia Sub-Region

The Australasian Sub-Region, comprising of Australia, New Zealand and surrounding external territories (islands), is located in the Oceanic Region between the Indian and South Pacific Oceans. There is significant variability in climate and rainfall between Australia and New Zealand, and also across the Australian continent itself. New Zealand has three times the per capita renewable fresh water resources of Australia, while Australia has close to thirty times the landmass of New Zealand and six times its population (see figure below).

Most Australians and New Zealanders have ready access to water, and despite being one of the world's driest inhabited continents, with access to just over one per cent of global freshwater resources, Australia has one of the highest per capita usage rates in the world. While New Zealand has a relative abundance of renewable freshwater resources, population growth and urbanisation will put increasing pressure on this supply.

Australia and New Zealand enjoy a relatively consistent high standard of service delivery in water and sanitation, and significant water security threats relate mostly to urbanisation, population growth, climate change and the financing, management and delivery of water services.

In New Zealand, there is a growing consumer expectation regarding water services and instilling a cost to abstract water from the environment. In Australia too, finding ways to balance water needs across differing user groups and the environment continues to attract strong opinions, along with water pricing and how utilities can best finance water supply and sanitation services. Australia faces further challenges in delivering safe and affordable drinking water to regional, rural and remote Australia, often across vast geographical service areas with low population density.

Future-proofing supplies against climate change is the largest emerging risk to water security in the Australasia Sub-Region. Rainfall in most parts of Australia and New Zealand will decrease and become more uncertain with climate change and temperatures are projected to increase, while fewer, more intense periods of rainfall are predicted. In this regard, addressing water security threats will focus on how both countries can: diversify their supplies to mitigate against reduced rainfall; innovate in agriculture and other sectors to improve water quality and catchment management; improve urban planning to achieve more water sensitive cities; manage water markets and the trading of water between users; and develop/progress

best-practice policy to better manage water and associated services across multiple jurisdictions.

| Country | Territory (km ²) | Population 2016 (Estimated) ¹ | GDP per capita (\$US) estimated | Renewable internal fresh water resources per capita (2014) ² (m ³ /year) | % access to improved* drinking water resources (2015) ³ | % People using Basic sanitation services** (2015) ⁴ |
|--------------------|------------------------------|--|---------------------------------|--|--|--|
| Australia | 7,692,024 | 24,446,000 | 56,554.00 | 20,971 | 100.00 | 100.00 |
| New Zealand | 268,021 | 4,692,700 | 38,201.60 | 72,510 | 100.00 | 100.00 |

Overview of Pacific Sub-Region

There are approximately 10 million people living in the Pacific sub-region, on islands scattered across 180 million square kilometres, an area 17 times larger than Europe.

The 14 island countries of the sub-region (Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, the Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) form part of a global group of small island developing states (SIDS) that share similar sustainable development challenges.

National populations range from over 8 million spread across approximately 800 islands that comprise the nation of Papua New Guinea, to single island nations such as Niue with a population of around 1,600. More than 80% of the total population of the sub-region lives in rural areas, including on remote islands and in difficult to access mountainous regions.

Despite the enormous diversity of the sub-region, water security is a critical sustainable development issue for all Pacific island countries, with profound impacts on lives and livelihoods, economic growth, public health, the environment and human rights.

¹ World Bank Databank <http://databank.worldbank.org/data/reports.aspx?source=population-estimates-and-projections>

² World Bank Databank

³ World Bank Data bank

⁴ World Bank Data bank



Figure 1: The 14 Pacific island countries of the sub-region, shown alongside Australia and New Zealand

The sub-region comprises a diverse range of island types, including volcanic, raised limestone, atolls and sandy islets, each with their own water resource characteristics (a summary of the geophysical and demographic characteristics of each Pacific island country can be found at Table 1 below). For many Pacific island communities, the availability of freshwater resources is confined to groundwater lenses, small streams and rainwater collected from roofs. These scarce resources are vulnerable to overexploitation and contamination, particularly in small island environments, where limited potable groundwater sources can be threatened by over-exploitation, land use activities and inappropriate sanitation facilities.

Unique water and sanitation challenges

Compared to other areas of the world, the Pacific sub-region faces some unique challenges in securing safe water supply and basic sanitation for its populations, including: small communities spread over vast distances; limited and extremely vulnerable water resources; limited human and financial resources; and rapidly changing demographics.

The sub-region is particularly vulnerable to the impacts of climate variability and change, and subject to a relatively high frequency of natural hazards, including cyclones, floods and droughts. The serious and emerging impacts of climate change add a further dimension to the problem: threatening resources; increasing uncertainties; and intensifying the extremes of climate variability.

In 2017, the Pacific was identified by the World Risk Report⁵ as the region with the highest disaster risk from a five year perspective, and the only region in which the population's

⁵ BÜNDNIS ENTWICKLUNG HILFT (2017) *WorldRiskReport 2017*. Berlin: Bündnis Entwicklung Hilft

vulnerability to extreme natural events had risen according to the World Risk Index (Vanuatu and Tonga were assessed to be the most vulnerable, with a further four Pacific island countries identified amongst the fifteen most vulnerable countries on earth).

In combination, these challenges contribute to a further unique characteristic of the Pacific sub-region - its relatively poor performance in meeting globally agreed targets for water and sanitation.

Table1: Geophysical and demographic characteristics of Pacific island countries

| Pacific Island Country | Capital | Land Area (km ²) | No. of islands or atolls | Predominant island types according to geology | Max height above SL (m) | EEZ (km ²) | Population (at last census) | GDP per capita (USD) |
|------------------------|--------------|------------------------------|--------------------------|--|-------------------------|------------------------|-----------------------------|----------------------|
| Cook Islands | Avarua | 237 | 15 | Volcanic, limestone, atoll, mixed | 652 | 1830,000 | 14,730 | 19,523 (2014) |
| FSM | Palikir | 701 | 607 | Volcanic, atoll, sand, mixed | 791 | 2,996,419 | 102,800 | 3,056 (2013) |
| Fiji | Suva | 18,333 | 332 | Volcanic, limestone, atoll, sand, mixed | 1,324 | 1,282,978 | 867,000 | 3,757 (2013) |
| Kiribati | Tarawa | 811 | 33 | Atolls and coral islands, one limestone island | 81 | 3,441,810 | 113,400 | 1,442 (2013) |
| RMI | Majuro | 181 | 29 | Atolls and coral islands | 10 | 1,990,530 | 54,880 | 3,524 (2013) |
| Nauru | Yaren | 21 | 1 | Limestone | 71 | 308,480 | 10,840 | 11,015 (2014) |
| Niue | Alofi | 259 | 1 | Limestone | 68 | 450,000 | 1470 | 12,945 (2012) |
| Palau | Melekeok | 444 | ~200 | Volcanic, some with limestone | 242 | 603,978 | 17,950 | 13,835 (2014) |
| PNG | Port Moresby | 462,840 | ~800 | Volcanic, limestone, atoll, sand, mixed | 4,509 | 2,402,288 | 8.1 Million | 1,931 (2013) |
| Samoa | Apia | 2934 | 9 | Volcanic | 1857 | 127,950 | 187,300 | 4,231 (2014) |
| Solomon Islands | Honiara | 28,230 | 347 | Volcanic, limestone, atolls | 2335 | 1,553,444 | 642,000 | 1643 (2013) |
| Tonga | Nuku'alofa | 749 | 171 | Volcanic, limestone, sand, mixed | 1033 | 659,558 | 103,300 | 4280 (2013-14) |
| Tuvalu | Funafuti | 26 | 9 | Atolls | 5 | 749,790 | 11,010 | 3253 (2013) |
| Vanuatu | Port Vila | 12,281 | 80 | Volcanic with coastal sands and limestone | 1877 | 663,251 | 277,500 | 2864 (2013) |

Performance against global targets for water and sanitation

Considered individually, a majority of PICs achieved the MDG targets for drinking water and sanitation in 2015. However, when considered as a whole, the Pacific region's MDG water and sanitation targets were not reached, with regional sanitation coverage estimated at only

31% and drinking water coverage estimated at just 48% in 2015⁶. While rates of coverage vary widely between and within Pacific island countries, when considered as a whole the combined coverage levels for both water and sanitation are lower than in any other region of the world.

It is important to note that, while all Pacific island countries are making progress in increasing access to safe water and sanitation, in many cases these are not keeping pace with population growth and demographic changes. From 2000 to 2015, sanitation coverage levels in the sub-region stagnated, while water coverage levels dropped slightly (over the same period, the world average has increased by 9 percentage points for sanitation and 8 points for water)⁷. This relatively poor regional performance is compounded by the challenges of improving access to improved water and sanitation in the region’s most water-challenged communities - particularly those located in rural Melanesia, informal urban settlements, and remote atoll environments.

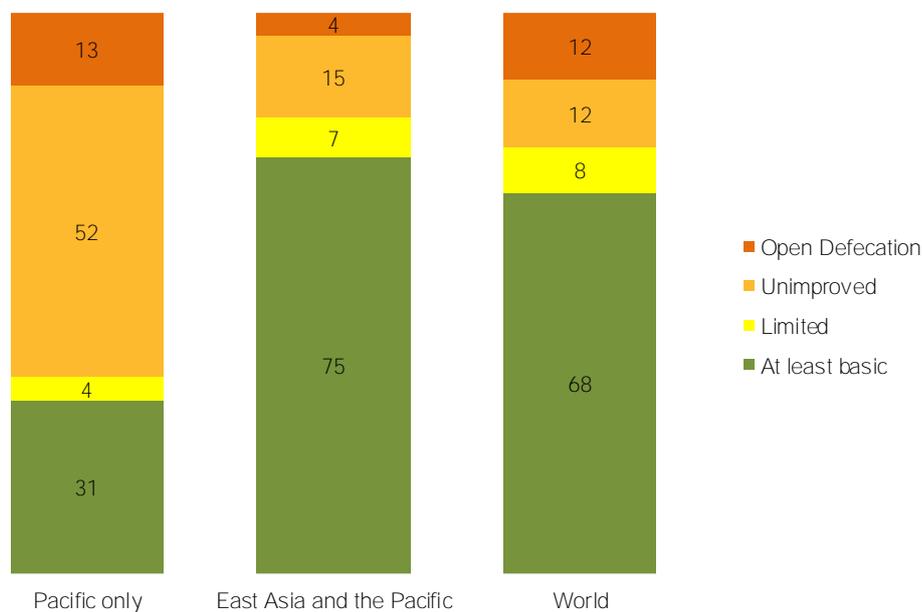


Figure 2: Percentage access to improved sanitation in Pacific island countries in 2015 compared to East Asia and the Pacific combined and the World as a whole⁸.

⁶ WHO/UNICEF/SPC/UNHABITAT (2016), *Sanitation, drinking-water and health in Pacific island countries : 2015 update and future outlook*. Geneva: WHO.

UNICEF East Asia and Pacific Regional Office (2017), *A Snapshot of Water and Sanitation in the Pacific 2017 Regional Analysis of UNICEF Programme Countries*. Bangkok: UNICEF.

⁷ Ibid

⁸ Ibid

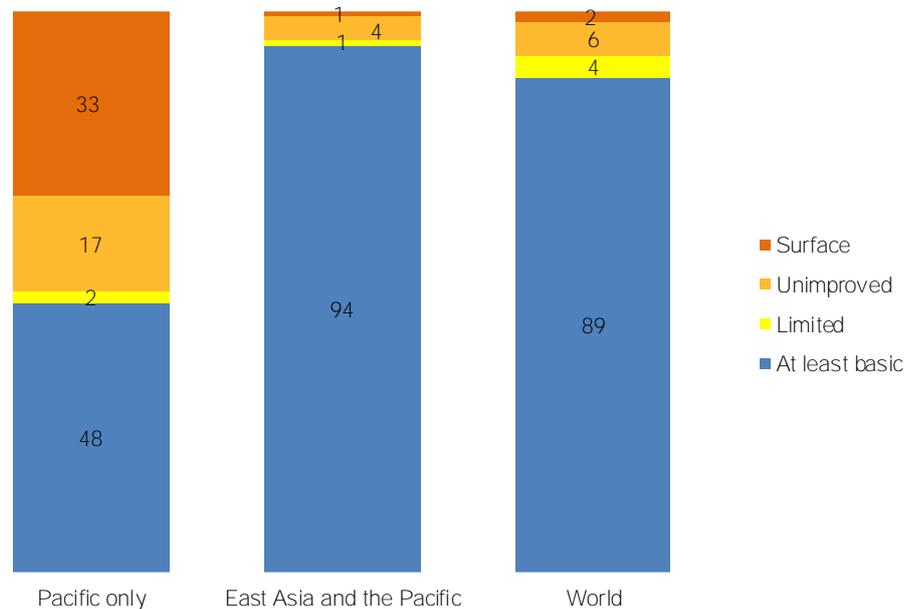


Figure 3: Percentage access to improved drinking water in Pacific island countries in 2015 compared to East Asia and the Pacific combined and the World as a whole⁹.

Required solutions

Given the unique and difficult challenges faced by the Pacific sub-regional, and the persistent barriers to improved access to safe water and sanitation, a fundamental recalibration is required in the efforts by Pacific island countries and development partners. The need for this surge in efforts is even greater in the light of projected impacts of climate change and population increases. Achieving national, regional and global targets for water and sanitation require that current efforts of countries be converted into serious and sufficient investments going forward.

Dialogue with Pacific island countries and development partners has identified that a number of critical factors need to be considered when formulating the targeted investments required to support meaningful progress towards global drinking water and sanitation targets across the sub-region. To be effective, investments will need to be formulated specific to individual Pacific island country needs, and designed to achieve the following critical outcomes:

1. Strengthen community resilience to natural hazards and climate change

Pacific water and disaster managers have acknowledged that the sub-region's vulnerabilities to natural hazards and climate change cannot be addressed without increased investments in water and sanitation, and that these efforts must be an integrated component of resilience efforts at the national and community levels. Support is required to strengthen and replicate country efforts to assess, manage and adapt to the water-related impacts of natural hazards and climate change, including through the maintenance of multiple water "lifelines" supported

⁹ ibid

by a diverse range of water sources including rainwater, groundwater, surface water, and in some cases supplementary supply.

2. Support the capacity of small, isolated and informal communities

The sub-region is home to numerous small, isolated and informal communities, often with limited access to government and private sector services. For these communities, drinking water, sanitation and hygiene are primarily managed at the household, village or settlement level. These communities face significant disparities in access to safe water and sanitation compared to their urban counterparts, and are expected to experience high population growth rates in the coming years. Targeted support is required to empower small, isolated and informal communities to establish, operate and maintain their own appropriate water and sanitation facilities, while also maintaining safe drinking-water and hygiene practices in homes, schools and health facilities.

3. Protect limited and fragile water resources from “ridge to reef”

For many Pacific communities, freshwater resources are confined to small and fragile groundwater lenses, streams and/or rainwater collected from roofs. These scarce resources are vulnerable to overexploitation and contamination - particularly in atoll environments where limited potable groundwater sources are threatened by over-pumping, land-use activities, and inappropriate sanitation facilities. Here, efforts to achieve water and sanitation targets must consider the water cycle as a whole by utilising Integrated Water Resource Management (IWRM) approaches from “ridge to reef” and appropriate sanitation technologies in order to protect the longer term sustainability of fragile water resources.

4. Ensure safe drinking water in all conditions

Poor water quality, often associated with the sub-region’s frequently occurring extreme climate events and natural hazards, contributes to disease outbreaks and to the region’s elevated rates of child morbidity and mortality. Several Pacific island countries have already identified the importance of this issue, and are employing Drinking Water Safety Planning (DWSP) for water supplies in urban and rural areas. The DWSP approach has been identified by countries and partners as an important mechanism in ensuring the safety of drinking water supplies across the sub-region, and will need to be an integral component of future investments in improved water and sanitation.

5. Address the constraints of limited human and financial resources

The Pacific sub-region is generally constrained by small economies, relatively high costs of materials and services, and serious challenges in developing and retaining human resources. Meaningful progress towards water and sanitation targets will therefore require a programmatic approach to strengthen and maintain capacity at the local, national and regional levels. For Pacific island countries facing serious resource and capacity constraints, sustained and focused partner support will be required to strengthen the capacity of governments, utilities and communities to establish, manage and maintain sustainable water and sanitation services.

Suggested Pacific sub-region case studies

Case Study 1: Minimising drought impacts on atoll communities in Kiribati

The island of South Tarawa is home to approximately 55,000 people, comprising around half the population of the Republic of Kiribati - an atoll country of 33 small islands spread across some 3.4 million square kilometres of the Pacific Ocean. Here, potable water supplies depend on the sustainable management of a single shallow aquifer at the Bonriki Water Reserve. In order to better manage this fragile water lifeline, the Government of Kiribati has been working with regional partners to survey, model and regularly monitor the groundwater lens, and has used this knowledge to develop a practical drought management plan that identifies management responses at various trigger points during and in anticipation of periods of low rainfall. The drought management plan has been designed to enable the sustainable management of the lens throughout all conditions, and is an important tool in supporting national efforts to adapt to the impacts of climate change and population growth. In the spirit of Pacific regionalism, Kiribati is now sharing this approach with other atoll nations facing similar pressures on their potable groundwater reserves.



Figure 4: The water security of the community of South Tarawa relies on the sustainable management of a single shallow aquifer (SPC)

Case Study 2: Strengthening climate resilience with eco-sanitation in Tuvalu

The atoll nation of Tuvalu has demonstrated that innovative sanitation solutions can contribute significantly to climate change adaptation efforts. The successful implementation of “eco-sanitation” (or composting toilets) in the capital Funafuti has demonstrated significant reductions in sewage pollution to groundwater and coastal waters, reduction in the use of fresh water for toilet flushing, and the generation of organic matter in a country devoid of agriculturally productive soils. Each household that adopted this innovative waterless solution has eliminated their sewage load to groundwater and reduced their use of fresh water by

approximately 30% - equivalent to eight to ten 10,000 litre rainwater tanks per household per year. Social and design lessons learnt from this demonstration have made eco-sanitation a key part of Tuvalu's response to climate change. Tuvalu is now a centre of regional expertise on eco-sanitation, and in the Pacific way has been active in sharing its findings with other atoll countries struggling with the pollution impacts and water demand associated with flush toilets.



Figure 5: For the atoll nation of Tuvalu, appropriate technologies such as eco sanitation are key to maintaining water security and minimising wastewater pollution to coastal waters (SPC)

Case Study 3: Improving emergency preparedness and response in Fiji

Fiji's population of just over 900,000 is scattered across some 333 Pacific islands. With increasing urbanization, informal settlements in flood plains and densely populated coastal areas, the proportion of Fiji's population affected by emergencies caused by flooding and cyclones is increasing. In recent years Fiji has made preparedness a priority - building capacity to deal with disasters and provide safe and sustainable water supply and sanitation systems as well as effective hygiene promotion. Modelled on global best practice, a cluster approach for humanitarian response in emergencies was endorsed by the Government of Fiji following the impacts of a major cyclone in 2012, and strengthened over subsequent years. The approach includes the establishment of a Water, Sanitation and Hygiene (WASH) cluster, ensuring better coordination of partner efforts to deliver WASH interventions during disasters and emergencies. The WASH cluster approach was put to full use in Fiji's response to the impacts of the record breaking Tropical Cyclone Winston that struck the nation in 2016, and was instrumental in coordinating the suite of WASH-related interventions required during the response and recovery phases.



Figure 6: The Fiji WASH Cluster has been instrumental in coordinating water and sanitation recovery efforts in the aftermath of 2016's Tropical Cyclone Winston (SPC)

Case Study 4: Building better water governance in Nauru

Water supply and sanitation issues in Nauru are amongst the most complex and challenging in the world. Frequent and severe droughts, increasing demand for freshwater, and pollution threats to its limited groundwater supply put Nauru in a precarious situation. Added to this is Nauru's reliance on aging infrastructure and energy-intensive desalination, the challenge of securing sustainable funding sources, and coping with the projected impacts of climate change. These are all issues that the Government of Nauru hopes to overcome through applying an integrated approach to managing its scarce water resources, now given a sound basis through Nauru's endorsement of its first National Water and Sanitation Policy. Nauru's policy addresses priority issues over a 15 years timeframe, covering the key themes of: climate variability and change and water resource vulnerability; water quality and supply; sanitation and environment; demand; governance; capacity; and community awareness and participation.



Figure 7: The Hon President Baron Waqa addresses the 3rd Asia Pacific Water Forum on the importance of sustainable water resource management to Nauru’s future (SPC)

Case Study 5: Achieving integrated sector reform in Samoa

Since 2005, Samoa has employed a sector wide approach to its Water and Sanitation Sector, successfully bringing together multiple Government agencies, development partners, and key stakeholders including the public and private sectors, NGOs and civil society groups to achieve common goals and priorities. The comprehensive sector wide programme is based on Integrated Water Resource Management (IWRM) principles, on the basis that water and sanitation are “everybody’s business.” This whole-of-sector approach has been key to Samoa achieving significant reform of its water and sanitation services, delivering efficiencies, strengthened local capacity, and improvements in service delivery and risk reduction. Progress is coordinated by a Water Sector Coordination Unit in accordance with periodically updated *Water for Life Sector Plans*, and regularly reviewed by all stakeholders in an inclusive and transparent manner.



Figure 8: An IWRM approach has enabled Samoa to bring together multiple stakeholders to tackle issues such as water resources management and flood mitigation

References

Pacific sub-region reporting draws upon: regional synthesis undertaken by the Pacific Community (SPC), World Health Organisation (WHO), United Nations Children’s Fund (UNICEF) and United Nations Human Settlements Programme (UN-HABITAT) summarised in the publication, *Sanitation drinking-water and health in Pacific island countries: 2015 update and future outlook*; subsequent regional snapshot updates undertaken by UNICEF and partners; and regional dialogue on water, sanitation and disaster reduction undertaken by the Pacific Community and its Member countries and territories.