Chapter 6

Non-communicable Diseases: Unlocking the Constraints to Effective Implementation of Policy Interventions

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6.1 Introduction[1]

The nine Commonwealth Pacific small states (Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) face a double disease burden. All have continuing prevalence of communicable diseases with ongoing high levels of susceptibility to potential epidemic diseases outbreaks. In addition, they all face the rapidly increasing health and socio-economic challenges posed by non-communicable diseases (NCDs), mainly cardiovascular diseases including stroke, diabetes, cancer and chronic respiratory diseases (GBD 2013). NCDs have reached a tipping point that is seriously eroding the capacity of all the countries to achieve long-term sustainable development and will likely undermine the ability of the countries to achieve the 2030 Sustainable Development Goals (SDGs) (UN 2015) and the Pacific Islands Forum[2] Leaders' Vision[3] for the region (PIFS 2014a).

Except for Papua New Guinea (PNG), NCDs are now the leading cause of death in eight of the Commonwealth Pacific small states (WHO 2011a). NCD-related disabilities are also increasing, resulting in rapidly rising health sector expenditures in most of the countries at a level that is clearly unsustainable in the long term (World Bank, 2014). NCDs not only rob the countries of their intellectual capacity (through losses to the labour force due to NCD mortality), they also undermine the quality of performance of each country's economic engine through declining labour force performance resulting from NCD-related disabilities (World Bank 2014).

Pacific Health Ministers and Pacific Islands Forum Leaders recognised the huge human, social and economic impact of NCDs on Pacific countries and territories and declared in 2011 that the Pacific was facing an NCDs crisis (WHO & SPC 2011; PIFS 2011). Forum Leaders emphasised the importance of acting quickly and decisively through a comprehensive response and called on governments, the private sector, civil society, regional and international organisations and development partners to work together to address the rapidly unfolding NCDs crisis (PIFS 2011).

Five years on from the time the initial political declarations were made, it is important to take stock of the level of progress achieved in the Commonwealth Pacific small states, as a subset of the broader Pacific islands region, in their fight against the scourge of NCDs.

This chapter provides a situational analysis of NCDs in the nine Commonwealth Pacific small states, reviews the current key responses, discusses some key challenges facing the countries and considers possible trajectories to 2050, before closing with some recommendations.

The key tenet underpinning the analysis and recommendations of this chapter is to provide the leaders and decision-makers of the nine Commonwealth Pacific small states with additional evidence which could help them in unlocking the constraints to effective implementation of priority NCDs interventions in the countries.

This chapter was based on a desk review of existing and accessible published literature on non-communicable diseases from the nine Commonwealth Pacific small states at the time of writing, supplemented by internationally available literature on NCDs from the Pacific region and globally. All the statistics used in this chapter are derived from the reviewed literature.

6.2 Context

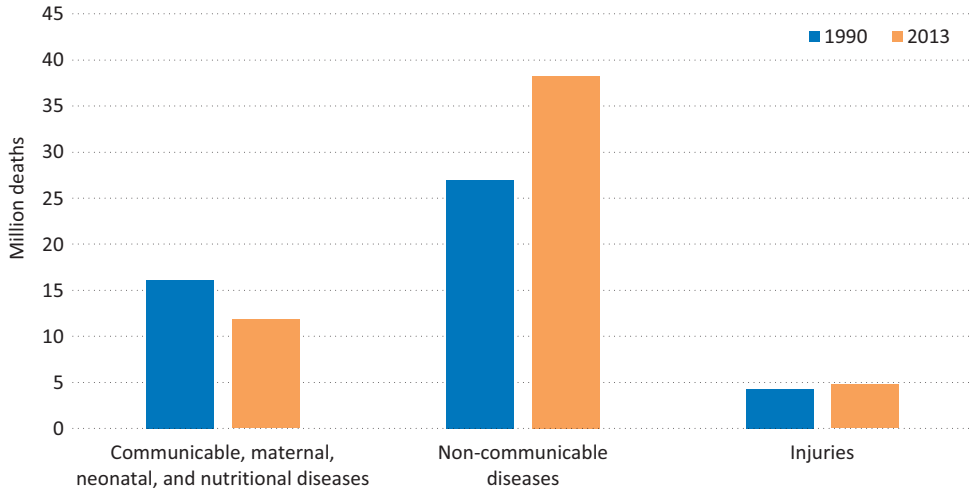
6.2.1 Global

NCDs are a significant health and development challenge globally. NCDs, mainly cardiovascular diseases (CVDs), including stroke and ischaemic heart diseases,[4] diabetes, cancer and chronic respiratory disease, constitute the single greatest cause of preventable illness, disability and mortality globally (WHO 2010). The social and economic impacts of NCDs are significant. They reduce global and national economic output, strain national governments and health systems, burden vulnerable households, put human rights at risk and seriously undermine development progress (UNDP 2013b; World Bank 2014). NCDs also impose several interrelated social and economic costs (World Bank 2014). Lost productivity due to illness, disability or death from NCDs can impede macroeconomic growth and shift public budgets from other important health and development objectives (WHO 2010; Bloom et al. 2011; UNDP 2013b; World Bank 2014).

NCDs are the leading cause of death globally, responsible for more deaths than all other causes combined (Figure 6.1) (WHO 2010). In 2013, 70 per cent of all deaths: 38.3 million of 54.9 million global deaths, were due to NCDs, representing an increase of around 42 per cent from 27 million in 1990 (GBD 2013). In contrast, deaths from communicable diseases during the same period fell by 27 per cent from around 16.1 million people in 1990 to 11.8 million in 2013, while deaths from various forms of injuries rose by 10 per cent from around 4.3 million people in 1990 to 4.8 million in 2013 (GBD 2013). The most common causes of NCD deaths globally in 2013 were: cardiovascular diseases (45%), cancers (22%), chronic respiratory diseases (11%) and diabetes, urogenital, blood and endocrine diseases (8%) (GBD 2013).

The rapidly growing burden of NCDs in low- and middle-income countries is enhanced by the negative effects of globalisation, rapid unplanned urbanisation, increasingly sedentary lives and rapidly increasing consumption of foods with higher levels of total energy, as well as increasing consumption of alcohol and tobacco

Figure 6.1 Global deaths by cause



Source: Global Burden of Disease (GBD) 2013 Mortality and Causes of Death Collaborators, 2013

products (WHO 2010; WHO 2002b). The speed of growth of these challenges outpace the ability of many governments in lower-income countries to respond effectively to an ever-expanding need for policies, legislation, services and infrastructure that could help protect their citizens from NCDs (WHO 2010).

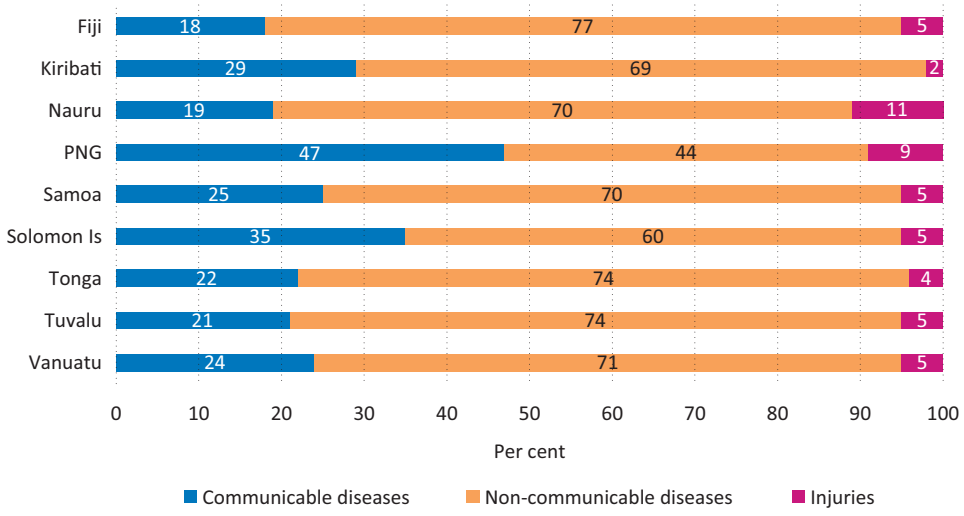
NCDs impose substantial macroeconomic and health systems costs globally. The four main NCDs and mental health are projected to cause a huge loss of global economic output, around US$47 trillion in a 20-year period (2010–2030), equivalent to what would be needed to eradicate poverty in 2.5 billion people for the next 50 years (Bloom *et al.* 2011). In addition, the cost of healthcare for NCDs creates significant strain on household budgets, particularly for lower-income families in poorer countries where most healthcare costs are met by patients out-of-pocket (WHO 2010). Treatment for diabetes, cancer, cardiovascular diseases and chronic respiratory diseases can be extremely expensive over time and such costs can force families into catastrophic spending and impoverishment (WHO 2010). More broadly, the costs to healthcare systems from NCDs are high and projected to increase substantially (WHO 2010; World Bank 2014).

6.2.2 Regional

NCDs prevalence and risk factors

The Pacific is often referred to as 'the NCDs capital of the world'.[5] NCDs are the leading cause of death in all Commonwealth Pacific small states except Papua New Guinea, ranging from around 60 per cent of all deaths in Solomon Islands to 77 per cent of all deaths in Fiji in 2008, with only PNG having a lower burden of 44 per cent of deaths that year (Figure 6.2) (WHO 2011a). The rate of NCDs in PNG is lower due to the relatively muted impact of globalisation and urbanisation (key determinants

Figure 6.2 Proportional mortality by cause, 2008



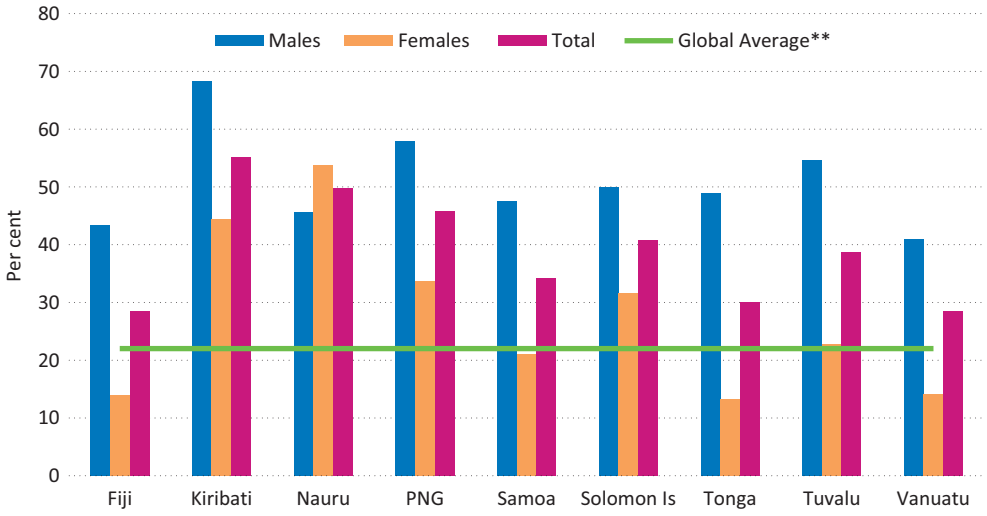
Source: WHO 2011a

of NCDs) on PNG's largely rural population; PNG also has lower than average life expectancy (longer lives is another key determinant of NCDs) (Luker 2013). In 2012, the trend increased for Fiji with 80 per cent of all deaths due to NCDs; the trend for Solomon Islands remained unchanged at 60 per cent, while there was a decline for PNG at 42 per cent (WHO 2014a). No data were available or reported for the other countries.

The Commonwealth Pacific small states also exhibit alarming trends on the risk behaviours for NCDs, such as tobacco use, harmful use of alcohol, obesity, diabetes, physical inactivity and unhealthy diet. Importantly, the trend in these modifiable risk behaviours suggests that NCDs will be an even greater health and socio-economic challenge in the coming decades (World Bank 2014). Globally, the rise in risk behaviours is linked to the impact of advertising by industries, such as the targeting of youths on tobacco and alcohol use (APHA 1992). Food advertising is linked to childhood obesity and obesity can impact children's behavioural and mental health (APA [n.d]).

Commonwealth Pacific small states have a high prevalence of tobacco use. In 2010, the prevalence of tobacco consumption in all the countries was higher than the global average (Figure 6.3) (WHO 2014b; WHO 2015a). Men have a higher prevalence in smoking in all countries except Nauru where women have a higher prevalence in smoking (54%) than men (46%) (WHO 2015a; Kessaram *et al.* 2015a). Adult males in Kiribati and PNG were ranked third and fifth highest in the world, respectively, on smoking prevalence (Ng et al. 2014). Women in Kiribati, PNG, Tonga, Samoa and Solomon Islands also have a higher prevalence of tobacco use than the regional average of 16 per cent (Ng *et al.* 2014; WHO 2015a). Despite PNG's high tobacco use, NCDs prevalence, particularly for chronic respiratory disease, heart disease and cancer, is relatively low. The character of NCDs in PNG is indeed different to

Figure 6.3 Prevalence rates for tobacco use, 2010*



Note: *For Tuvalu, 2000 data used as no latest data. **Average for 2012.
Source: WHO 2014b, 2015a

other countries (Luker 2013). Studies have found no relationship between tobacco smoking and chronic obstructive pulmonary disease, although betelnut-chewing is recognised as a major factor behind cancer of the oral cavity and could be a risk factor for diabetes and other NCDs, highlighting that internationally significant risk factors may be locally less important in PNG (Luker 2013).

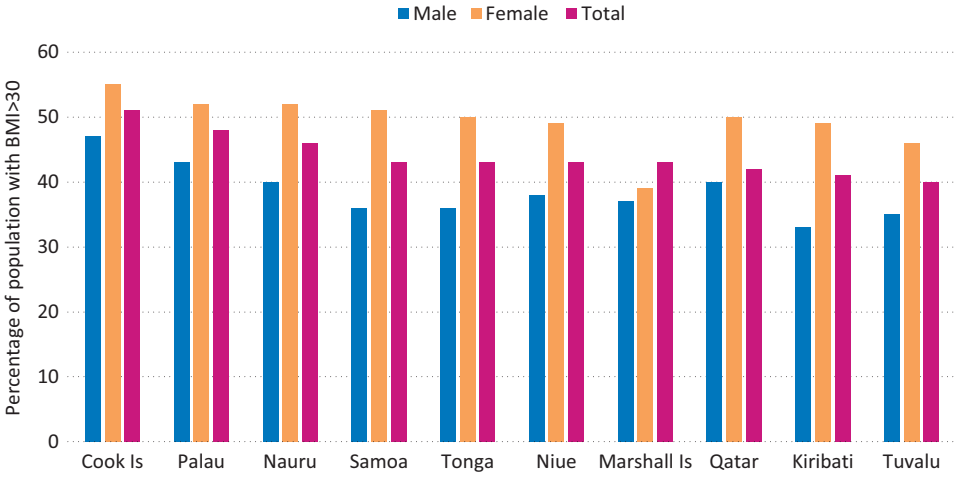
Pacific countries have very high prevalence of overweight people,[6] obesity[7] and physical inactivity.[8] Being overweight and obesity are major risk factors for NCDs, particularly for diabetes and CVDs, including stroke.

Nine of the ten most obese countries in the world are from the Pacific, of which five are Commonwealth Pacific small states – Nauru, Samoa, Tonga, Kiribati and Tuvalu (Figure 6.4). Qatar is the only non-Pacific country in the top ten. Between 40 and 51 per cent of the adult population in these countries have a body mass index (BMI) greater than 30. Women have a much higher prevalence of being overweight and obesity than men in all the countries, a risk factor that increases their susceptibility to diabetes and CVDs (WHO 2014b; WHO 2002a).

There are also particularly high levels of physical inactivity among adolescents in the Pacific, ranging from 84 per cent in Tonga to 91 per cent in Nauru for girls; and from 78 per cent in Kiribati to 88 per cent in Tonga for boys (WHO 2014b). Physical inactivity for adult women ranged between 9 per cent in Vanuatu (likely low due to relatively rural population engaging in subsistence activity) to 53 per cent in Tonga and between 7 per cent in Vanuatu and 36 per cent in Nauru for men (WHO 2014b).

The Pacific was recently described as the 'epicentre of the global diabetes epidemic',[9] given the high prevalence of diabetes, including for Commonwealth Pacific small states.

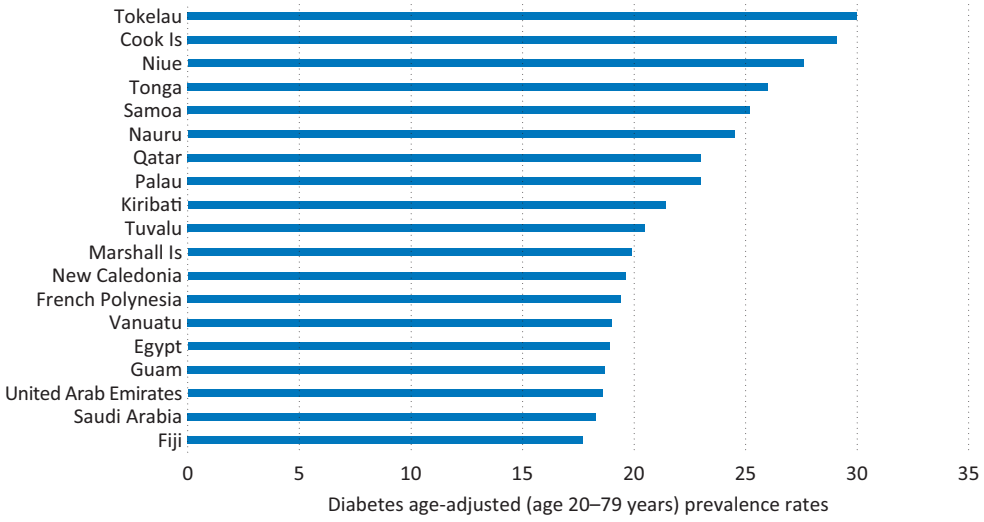
Figure 6.4 The ten most obese countries in the world



Source: WHO 2014b

Fifteen of the top 20 countries with the highest prevalence of diabetes in the world, including seven of the Commonwealth Pacific small states (except PNG and Solomon Islands), are in the Pacific (WHO 2014b; International Diabetes Federation 2015) (Figure 6.5). It should be noted though that a recent report (Taylor *et al.* 2016), highlighted that deficiencies in the WHO methods used to test for the disease erroneously inflated diabetes rates for the Pacific, and called for a recalculation of results.

Figure 6.5 Top 20 countries with the highest prevalence of diabetes in the world



Source: WHO 2014b; International Diabetes Federation 2015

Globally, adults with diabetes are two to four times more likely to have heart disease or a stroke than adults without diabetes (American Heart Association 2015) and at least 68 per cent of people aged 65 years or older with diabetes die from some form of heart disease, while 16 per cent die of stroke (American Heart Association 2015). In Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu, diabetes is one of the top three causes of premature death and mortality (GBD 2013).

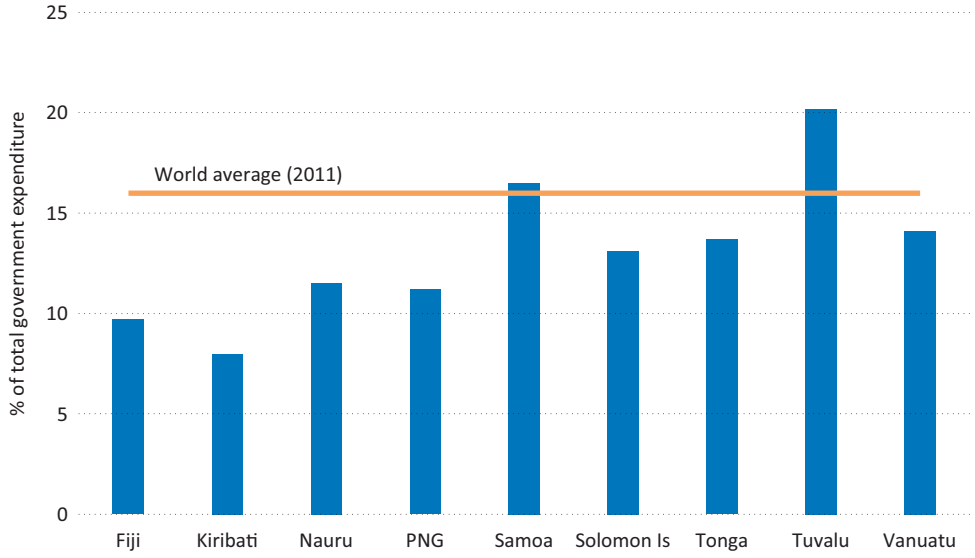
Economic impact of NCDs

Although there is a paucity of hard quantitative and qualitative data on the actual economic impact of NCDs in the nine Commonwealth Pacific small states, a few studies have been carried out that point to the high economic cost of NCDs. In a recent report, the World Bank (2012) found that the treatment of diabetes in Vanuatu was costing a minimum of US$347 per patient per year (which is equivalent to US$362 in 2015[10]). The same report cited an earlier study (Doran, cited in World Bank 2012) that showed patients admitted with NCDs in Tonga and Vanuatu incurred disproportionately larger shares of all treatment expenditure given the higher cost of NCDs treatment compared to treatment for communicable diseases. Similarly, another study (Win Tin *et al*. 2015) found that the cost of treating diabetes in 2011 in Solomon Islands and Nauru were US$198 and US$525 per person per year, respectively. The same study estimated that the total annual cost for treating diabetes to the governments of Solomon Islands and Nauru were US$9 million and US$884,000, respectively, amounting to around 20 per cent of governments' total annual healthcare expenditure in both countries. These levels are comparable to some industrialised countries, such as Canada, Australia, the USA, Germany and others, where over one-third of total expenditures are spent on NCDs (Garg and Evans 2011).

Health expenditure accounts for more than 10 per cent of total government expenditure in seven of the nine Commonwealth Pacific small states, compared to the world average of 16 per cent (Figure 6.6). As a percentage of GDP, health spending has increased in all Commonwealth Pacific small states for which data are available (Figure 6.7). Much of the increase in health expenditures is driven by NCDs, with expenditure on NCDs reaching well over 50 per cent of the total health budgets in many Pacific countries (PIFS 2011). With the growing burden of NCDs, there is an argument for increasing the level of expenditure on health. However, most Commonwealth Pacific small states face limited scope for sustained economic growth to support continually increasing health costs in a sustainable way (World Bank 2014).

Health funding from development partners had not matched the magnitude of the NCDs burden in the Pacific islands. Development partners have been relatively slow to align their support to the disease profile and epidemiological burden faced by the Pacific (Negin and Robinson 2010; Byfield and Moodie 2013). Traditionally, the bulk of development assistance allocated to health priorities favoured communicable diseases, such as HIV/AIDS, tuberculosis and malaria, despite the burden of NCDs superseding the combined burden of these three diseases in majority of the countries, except PNG.

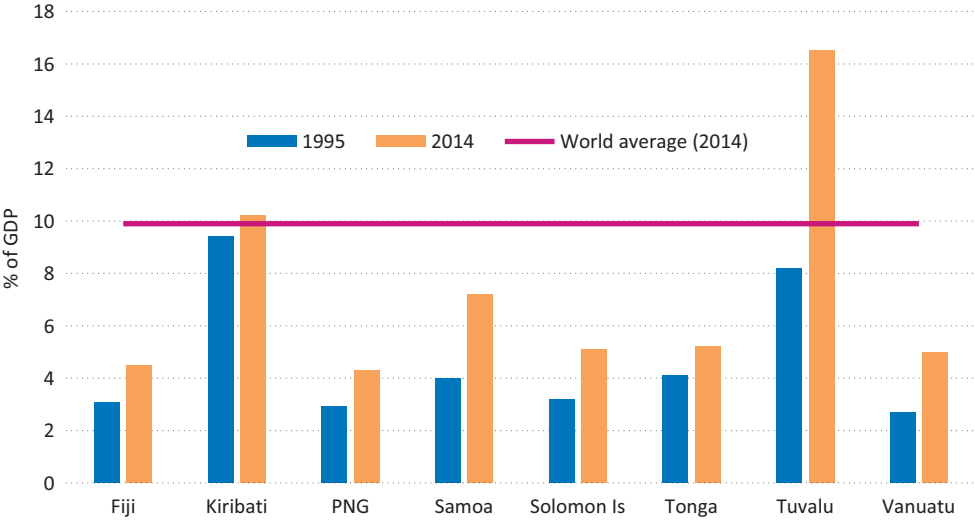
Figure 6.6 Health expenditure as a percentage of total government expenditure in 2014



Source: World Development Indicators 2016b

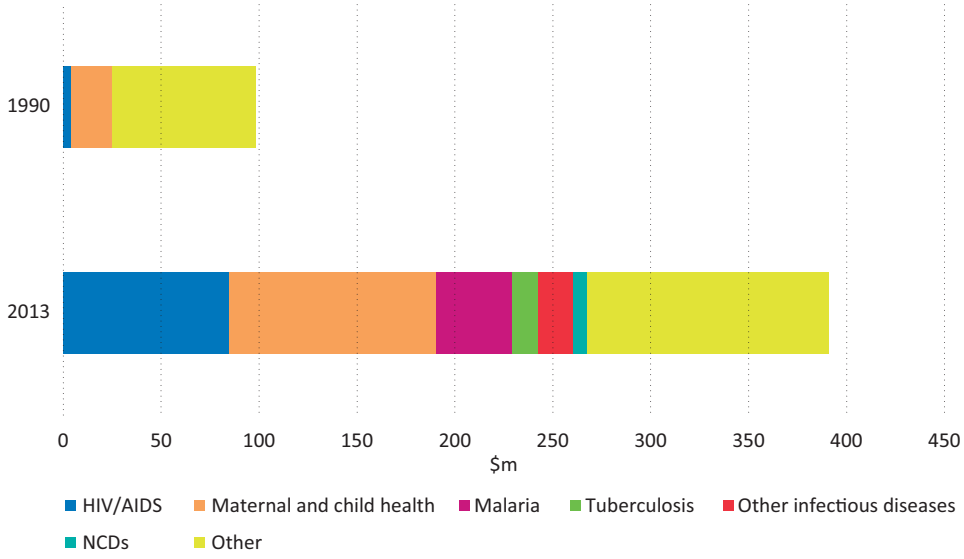
Development assistance for health to the Commonwealth Pacific small states increased significantly between 1990 and 2013. However, in 2013 the majority of the assistance was dedicated to HIV/AIDS, tuberculosis and malaria (35%), maternal and child health (27%), other infectious diseases (5%) and other health-related interventions

Figure 6.7 Health expenditure as a percentage of GDP



Source: World Development Indicators 2016

Figure 6.8 Development assistance for health by focus area to Commonwealth Pacific small states



Source: Institute for Health Metrics and Evaluation 2016

(32%), while NCDs attracted only 2% of the total development assistance for health (Institute for Health Metrics and Evaluation 2016) (Figure 6.8).

It is clear that donor funding decisions have not been driven by the burden of disease profiles of the countries, but by other factors including a strong global HIV community, the commitment to the Millennium Development Goals (MDGs), in which NCDs were not included, and the lack of coherence in responding to the NCDs (Negin and Robinson 2010).

6.3 Major responses

6.3.1 International

The Moscow Declaration on NCDs endorsed by ministers of health in April 2011 (WHO 2011c) and the 2011 United Nations General Assembly Political Declaration (United Nations 2012) provided the global platforms that engineered the joint global commitment to tackle NCDs. The 2011 Political Declaration recognised (i) the threat NCDs posed to the economies of all countries, (ii) the primary role and responsibilities of governments to respond to the challenges of NCDs, and (iii) the important role of the international community and international co-operation in assisting developing countries, and complementing national efforts to combat NCDs (United Nations 2012).

In May 2013, the World Health Assembly endorsed the WHO Global Action Plan for the Prevention and Control of NCDs 2013–2020 (WHO 2013b) to expedite implementation of the 2011 Political Declaration. The Global Action Plan provided nine overarching principles that countries could consider when developing their

respective NCDs action plans: a human rights, equity-based, multisectoral and life-course approach, recognise the central role of government, empower people and communities, focus on evidence-based strategies, aim for universal health coverage and strengthen partnerships, while managing any conflict of interest. The Global Action Plan had an overarching target to reduce premature mortality from NCDs by 25 per cent by 2025 (WHO 2011b; WHO 2013b; WHO 2013c).

At the 2014 UN General Assembly High-level Meeting on the Prevention and Control of Non-communicable Diseases, governments committed to: (i) setting national NCD targets for 2025, (ii) developing national multisectoral policies and plans to achieve the national targets by 2025, (iii) reducing risk factors for NCDs, building on guidelines set out in the WHO Global NCDs Action Plan, and (iv) strengthening health systems to address NCDs through people-centred primary healthcare and universal coverage, building on guidance set out in the WHO Global NCDs Action Plan (United Nations 2014; WHO 2015b).

The importance of tackling NCDs was also recognised in the outcome document of the Third International Conference on Small Island Developing States.[11] The SAMOA Pathway called for comprehensive, whole-of-government multisectoral policies and strategies for the prevention and management of diseases, universal health coverage, targets and strategies to reverse the spread and severity of NCDs, implementation of well-planned and value-added interventions and accountability mechanisms for NCDs monitoring.

More recently, in September 2015, the UN General Assembly adopted the 2030 Development Agenda for Sustainable Development, which provided an overarching target 'to reduce by one-third, premature mortality from NCDs by 2030' (United Nations 2015). Unlike the MDGs, which did not have a specific goal or target on NCDs, Goal 3 of the SDGs ('Ensure healthy lives and promote well-being for all at all ages') now has specific targets supported by a range of global and national monitoring indicators to measure progress against the SDGs' overarching goal on NCDs by 2030 (WHO 2013b; WHO 2013c).

6.3.2 Regional

The Pacific islands region has been at the forefront of the fight against NCDs. In 1995, Pacific health ministers adopted the visionary concept of 'healthy islands as the unifying theme for health promotion and health protection in Pacific island nations. The resulting 'Yanuca Island Declaration on Health in the Pacific in the 21st Century' defined healthy islands as places where (i) children are nurtured in body and mind, (ii) environments invite learning and leisure, (iii) people work and age with dignity, and (iv) ecological balance is a source of pride (WHO 1995). This joint vision by Pacific health ministers has provided the foundation for the region's collaborative work in the health sector over the past two decades and continues to provide the platform for collective regional action that supplement national efforts to combat NCDs.

In 2011, the Pacific ministers of health (WHO & SPC 2011) and the Pacific Islands Forum Leaders (PIFS 2011) declared that the Pacific was facing an NCDs crisis, calling

it a human, social and economic crisis. Two years later, in 2013, Pacific ministers of health agreed to work towards a Tobacco Free Pacific by 2025 (to achieve 5 per cent or less adult prevalence of tobacco use in each country by 2025) (WHO & SPC 2013). Furthermore, in their historic inaugural meeting in 2014, Pacific economic and health ministers adopted the Pacific NCDs Roadmap (PIFS 2014b; World Bank 2014), agreeing to:

- strengthen tobacco control by an incremental increase in excise duties to 70 per cent of the retail price of cigarettes over the medium term;
- consider an increase in taxation of alcohol products as a way of reducing harmful alcohol consumption;
- consider policies that reduce consumption of local and imported food and drink products that are high in sugar, salt and fat content and directly linked to obesity, diabetes, heart disease and other NCDs in the Pacific through targeted preventative measures, taxes and better regulation;
- improve the efficiency and impact of the existing health budget by reallocating scarce health resources to targeted primary and secondary prevention of cardiovascular disease and diabetes, including through the Package of Essential Non-communicable Disease Interventions of 'best buys'; and
- strengthen the evidence base for better investment planning and programme effectiveness to ensure interventions work as intended and provide value for money.

The Pacific NCDs Roadmap also identified more than 30 other priority interventions that can be implemented by other government sectors, the private sector, civil society, churches and other sectors outside of government that countries can consider when developing their respective national NCDs strategies (PIFS 2014b; World Bank 2014).

In the same year, during the Third International Conference on Small Island Developing States, two regional NCDs partnerships were established, aimed at providing co-ordinated, effective and efficient regional support to Pacific island countries to combat NCDs more effectively at the national level:

- **United Nations Pacific Interagency Taskforce on Non-communicable Disease Prevention and Control.**[12] The Taskforce co-ordinates the activities of the relevant United Nations' funds, programmes and specialised agencies in the Pacific to improve collaboration, co-ordination, communication and exchange of information between UN agencies, as they work collectively toward supporting Pacific island countries to combat NCDs. The taskforce, now called the 'UN Theme Group on NCDs', has expanded its membership beyond the UN to include the World Bank and the Secretariat of the Pacific Community (SPC).
- **Pacific NCDs Partnership – a multisector partnership and approach to prevent and control NCDs in the Pacific.**[13] The primary objective of the Pacific NCDs partnership[14] is to strengthen and co-ordinate the necessary capacity and expertise to support Pacific SIDS to significantly progress the prevention

and control of NCDs in order to meet the globally agreed NCDs targets. It is now operating as the Pacific NCDs Network.[15] The Pacific NCDs Network is supported through the work of the Pacific Monitoring Alliance for Non-communicable Disease Action (MANA)[16] – a collaborative alliance inclusive of all Pacific island countries and territories (PICTs), networks, agencies, organisations and institutions working to improve the monitoring and surveillance of non-communicable disease across the Pacific region. While still in their infancy, the Pacific NCDs Network and the MANA hold tremendous potential if well supported to improve the monitoring of NCDs interventions in the region. This would facilitate more effective decision-making at country level on policy interventions that would bring the greatest benefits to the countries and in prioritisation of strategies and financing modalities that could be employed to achieve win-win outcomes of reducing the prevalence and economic costs of NCDs while at the same time building the resilience of national economies.

Most recently, at the Pacific NCDs Summit in Tonga in June 2016, Pacific Leaders and ministers expressed serious concern that the response to the NCDs crisis in the Pacific was grossly underfunded in light of its magnitude (SPC 2016c). Consequently, there was support for a Pacific funding mechanism (regional, bilateral and/or national) to better align the level of funding to the burden of NCDs, with agreement to explore options to establish greater synergies between funding sources by December 2018 (SPC 2016c). In her keynote address at the Summit, UNDP Administrator Helen Clark indicated that in April 2015, the UN Chief Executives Board had proposed the development of a Pacific Trust Fund for NCDs which if implemented would be a significant boost to the implementation of the Regional NCDs Roadmap.[17]

6.3.3 National

Based on publicly available and accessible documents at the time of writing, Fiji, Nauru and Tonga have fully developed and are implementing their new national NCDs strategies. Vanuatu has developed a high-level NCDs Roadmap, and is in the process of developing its detailed national NCDs strategy. Solomon Islands has commenced work on a new NCDs strategy to replace its old plan, while PNG has commenced work on its first NCDs strategy. Although Kiribati does not have a sector plan on NCDs, NCDs was one of the key priority areas in the new Kiribati Development Plan, 2016–2019. Samoa and Tuvalu's NCDs strategies ended in 2015 and the author was not able to access information on the status of new NCDs strategies for the two countries at the time of writing.

Fiji became the first country in the Commonwealth Pacific to have both the Head of State and the Head of Government involved in leading the fight against NCDs at the national level (Box 6.1).

The national NCDs strategies that were available for review[18] are strong in their treatise of the main NCDs, their shared risk factors and the planned interventions to address the main NCDs risk factors effectively. The strategies are weaker in their treatise of upstream factors that can impact NCDs, such as trade policies and trade agreements, policy coherence, mutual accountability and governance and other

Box 6.1 High-level political leadership in the fight against NCDs in Fiji

In January 2016, the President of Fiji, His Excellency Major-General (Ret'd) Jioji Konousi Konrote, took on the role as Fiji's champion and leading advocate for the elimination of NCDs. The President's acceptance of the role followed an invitation by the country's Minister of Health and Medical Services at the time, Honourable Jone Usamate. Fiji is also currently in the process of finalising the establishment of a high-level multisectoral committee on NCDs to be chaired by the Prime Minister. The Committee will oversee the implementation of Fiji's national NCDs strategy and is scheduled to meet twice a year.

Source: Fiji Ministry of Health 2016

broader social and environmental determinants of NCDs such as poverty, population growth and climate change. In addition, the strategies could be further strengthened by harnessing the energy of civil society to combat NCDs, incorporating the contributions from regional and international partners, greater utilisation of information and communications technology (ICT) applications for outreach to people in rural and remote communities, and identifying key gaps where targeted operational research could help to provide information that could assist national planning and implementation of effective NCDs interventions across multiple sectors.

The capacity of national systems to respond to NCDs varies among the nine Commonwealth Pacific small states. According to the WHO (2014a), Fiji and Nauru met eight out of the nine criteria used to assess the national capacity to respond to NCDs, while Kiribati, Samoa, Solomon Islands, Tonga and Tuvalu met six out of the nine (Table 6.1). However, currently there is no agreed mechanism to assess accountability indicators that would measure the actual level of implementation of policy, legal, legislative or fiscal reforms that would be required at the national level to enhance effective implementation of priority NCDs interventions (Magnusson and Patterson 2014; 2015).

Commonwealth Pacific small states have implemented various measures to address the key NCDs risk factors.

In terms of addressing tobacco use, all nine Commonwealth Pacific small states are implementing the Framework Convention on Tobacco Control (FCTC) (WHO 2003), although the degree to which respective legislations are FCTC-compliant varies (Kessaram *et al.* 2015a). In 2012, total tax on tobacco as a percentage of retail price ranged from 30 per cent in Solomon Islands to 68 per cent in Tuvalu (World Bank 2014). Fiji, PNG and Tonga have since increased their taxes (SPC 2016a). Tonga has now exceeded the 70 per cent tax threshold.[19] However, in some countries, the base price of tobacco is quite low so despite the higher tax rates, the final prices to consumers are not prohibitive, while for some countries locally produced tobacco prices are not fully transparent (World Bank 2014; Kessaram *et al.* 2015a). Samoa is one of the few Commonwealth Pacific small states that have linked tax and price

Table 6.1 National capacity to respond to NCDs

Nine policy areas to assess national capacity to respond to NCDs	Fiji	Kiribati	Nauru	PNG	Samoa	Solomon Is	Tonga	Tuvalu	Vanuatu
Has an operational NCDs unit/branch or department within the Ministry of Health, or equivalent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Has an operational multisectoral national policy, strategy or plan of action that integrates several NCDs and shared risk factors	Yes	No	Yes	No	No	No	Yes	No	No
Has an operational policy, strategy or action plan to reduce the harmful use of alcohol	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Has an operational policy, strategy or action plan to reduce physical inactivity and/or promote physical activity	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Has an operational policy, strategy or action plan to reduce burden of tobacco use	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Has an operational policy, strategy or action plan to reduce unhealthy diet and/or promote healthy diets	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Has evidence-based national guidelines/protocols/standards for the management of major NCDs through a primary care approach	Yes	No	No	No	No	Yes	No	Yes	Yes
Has an NCDs surveillance and monitoring system in place to enable reporting against the nine global NCDs targets	Yes	No	Yes	No	Yes	No	No	No	Yes
Has a national, population-based cancer registry	No	No	Yes	No	No	No	No	No	No
Policy capacity present out of nine	8	6	8	2	6	6	6	6	5

Source: WHO 2013a, 2014

policies to health objectives and also implemented a comprehensive ban on tobacco advertising, promotion and sponsorship within five years of entry into the FCTC (Kessaram *et al*. 2015a).

However, Pacific island countries and territories need to step up their efforts if they are to meet the 'Tobacco Free Pacific by 2025' target (Magnusson and Patterson 2015). As the initial high-level agreement did not have associated milestones and indicators, WHO and SPC are currently working closely with Pacific heads of health to agree on appropriate milestones and indicators to measure progress toward the 2025 target to be tabled for consideration by Pacific health ministers at their next meeting in 2017.[20] Commonwealth Pacific small states could also pursue implementing plain packaging of tobacco products as stipulated in Article 11 of the WHO Framework Convention on Tobacco Control.[21]

Harmful use of alcohol is another key NCDs risk factor. All nine Commonwealth Pacific small states have introduced taxes on alcohol. Countries also have programmes to prevent harmful use of alcohol and policy measures in place to restrict access to retailed alcohol (SPC 2016a).

To combat unhealthy diets, Fiji, Kiribati, Nauru, Samoa, Tonga and Vanuatu have applied taxes on sugar sweetened beverages, with Vanuatu recently increasing its tax rate (SPC 2016a). Except for PNG, all Commonwealth Pacific small states apply taxes on unhealthy foods, including foods with high sugar and fat content and a range of cooking oils. The rate of taxes and applicable items vary. For example, Kiribati applies a 30 per cent tax on sugar, 50 per cent tax on sugar confectionaries and 55 per cent tax on chocolate and other foods containing cocoa, while Vanuatu applies a 20 per cent tax on sugar and sugar confectionaries, but sugar confectionaries containing cocoa are duty free. Tonga applies tax on lard and other pig fat, while these are currently duty free in PNG. Both Tonga and Samoa apply tax on turkey tails, with Tonga applying an excise tax and Samoa applying an import duty (SPC 2016a).

Some countries have removed or reduced taxes on healthy foods to encourage consumption. Tonga has completely removed import taxes on all foods considered to promote healthy living (Tonga 2016a; Tonga 2016b), while Fiji has reduced taxes from 32 to 5 per cent for fruits and vegetables (SPC 2016a).

In addition, some countries are also starting to use health levies as additional tools to reduce consumption on certain goods and to raise revenue. In 2016, Fiji introduced health levies on alcohol, tobacco and sugar-sweetened beverages.[22] However, the revenue raised through the levies goes into the general revenue pool rather than for health.

Except for PNG, all Commonwealth Pacific small states have commenced implementing the WHO Package of Essential Non-communicable (PEN) disease interventions for primary healthcare in low-resource settings (WHO 2010a). Samoa was recognised for successfully adapting the PEN protocol for implementation at the community levels[23] (see Box 6.2).

Box 6.2 PEN Fa'a Samoa: Package of essential non-communicable disease interventions for NCDs in the Samoan way of life

The Samoa Ministry of Health, with support from WHO, adapted the WHO Package of Essential Non-communicable disease interventions for primary healthcare in low-resource settings, for an initiative called PEN Fa'a Samoa – Package of Essential Non-communicable Disease Interventions for NCDs in the Samoan Way of Life. PEN Fa'a Samoa was implemented as a demonstration project in selected participating villages, targeting mainly cardiovascular diseases and diabetes. The village project aimed to address key issues in the health system delivery, integrate village outreach services for NCDs to ensure early detection and increased awareness of NCDs risk factors, and facilitate referrals to district health facilities for treatment and follow-up. The demonstration project at the village level was community-based, integrating the principles from the Pacific Healthy Islands vision to deliver a core set of public health interventions on NCDs, comprising individual, peer, family and community mobilisation components.

The project was launched in November 2014. From December 2014 to February 2015, foundations were laid in the selected villages, participating district health facilities and women's committees, with emphasis on enriching the understanding of NCDs among the villages. In March 2015, the results of the first round of outreach showed that a total number of 1,200 people were screened and around 40 per cent of these people were referred to the closest district hospital. The next steps were to review the case management of referred patients and follow up on their treatment schemes.

The PEN Fa'a Samoa initiative won the 'WHO Best Proposal Award' in recognition of addressing Non-communicable Diseases for Pacific island countries at the 2015 Pacific Health Ministers Meeting in Fiji. It is recognised as a best-practice example as it demonstrates the value of community involvement in the fight against NCDs. It also attests to the value of the WHO PEN as an appropriate tool to address NCDs at the rural and community level.

Source: Samoa Ministry of Health

Countries have also made progress in improving the availability and accessibility of NCDs-related data. The WHO STEPwise approach to Surveillance (STEPS) (WHO 2003a) is the principal method adopted to collect, analyse and disseminate data on NCDs risk factors. The second rounds of STEPS surveys have been completed in Fiji, Nauru and Solomon Islands and are well advanced in Kiribati, while Tuvalu recently completed its first STEPS survey. A global school-based health survey has been completed in Fiji, with similar surveys for Samoa and Vanuatu in the advanced planning stage. Initial indications from some of the completed surveys suggest possible reductions in some risk factors (physical inactivity and tobacco use), but no change or worsening in other risk factors (obesity and diabetes) (SPC 2016a).

6.4 Key challenges and opportunities

Despite the level of progress achieved by the Commonwealth Pacific small states, the enormity of the NCDs challenge remains overwhelming for many. Much more needs to be done by the countries themselves, their development partners and the international community to help the Commonwealth Pacific small states respond effectively to the NCDs epidemic. The following key challenges need to be addressed urgently to help countries unlock some of the constraints that undermine effective implementation of priority NCD interventions.

6.4.1 Trade and health sector policy coherence

There is a direct and intricate relationship between trade, health and NCDs, therefore achieving policy coherence between 'health policies that are trade compliant' and 'trade agreements that protect public health' is of crucial importance and requires closer engagement between the health and trade sectors (Legge *et al.* 2013; UNDP 2013a). Trade has been identified as one of the multiple structural drivers of NCDs in the Pacific (Sahal Estimé *et al.* 2014). Trade has particularly been linked with obesity and NCDs prevalence in Fiji and Tonga (Sahal Estimé *et al.* 2014). Trade policies since the 1960s have had a major precipitating effect on the nutrition transition in Pacific countries by increasing the availability of imported and increasingly processed foods (UNDP 2013a; Snowdown *et al.* 2013). Higher consumption of these foods has followed their increased availability, as well as the monetisation of island economies (Sahal Estimé *et al.* 2014).

A number of trade negotiations currently underway can strongly influence the social determinants of health and NCDs (Legge *et al.* 2013), including the Pacific Agreement on Closer Economic Relations (PACER) Plus,[24] and the Economic Partnership Agreement (EPA) with the European Union.[25] Accession to the World Trade Organisation (WTO), while appearing to be attractive, has some drawbacks for small countries, as intending members are now required to make far more changes to their trade policies than countries that joined earlier, which could potentially decrease their policy space and flexibility to deal with domestic policy and regulations such as introducing a ban on tobacco or alcohol advertising (Legge *et al.* 2013). The Commonwealth Pacific small states that are currently not WTO members or observers are Kiribati, Nauru and Tuvalu. In addition, the proposed Trans-Pacific Partnership Agreement[26] could impact Commonwealth Pacific small states as some of the provisions being discussed (stronger intellectual property and investment provisions that can allow foreign companies to sue governments over policies and laws that reduce the value of their investments) could have implications for public health policies such as tobacco control policy (Legge *et al.* 2013).

Trade of tobacco, alcohol and unhealthy food is also exacerbated by continued global marketing of these products, spurred by powerful transnational companies. These companies have the potential to curb efforts to combat NCDs through political lobbying, legal manoeuvres, pre-emptive self-regulatory schemes, corporate social responsibility initiatives and other strategies to shape community perceptions (Magnusson and Patterson 2015).

Therefore, Commonwealth Pacific small states need new ways of working together to guard against industry interference in policy-making when determining trade, investment, and commerce policies.[27] Countries also need to consider setting up formally mandated mechanisms, with associated institutional arrangements, for ongoing co-operation between the Trade and Health Ministries (Legge *et al*. 2013; UNDP 2013a; Bonita *et al*. 2013), such as a 'National Trade and Health Committee' whose role would be to ensure there is policy coherence aimed at protecting health while generating trade for economic development (Legge *et al*. 2013); UNDP 2013a, Bonita *et al.* 2013; Magnusson and Patterson 2015). However, such mechanisms require lawyers, health policy officials and trade officials who are experts in their own fields and fully conversant with the other disciplines, emphasising the need to have the appropriate expertise in such mechanisms (Magnusson and Patterson 2015). Hence, there is a need to develop or strengthen core capacity across a range of disciplines at the national and/or regional levels, including but not limited to expertise in public health law, health economics and policy, trade law and policy, commerce law and policy, fiscal policy and regulations and WTO rules and regulations to (a) enable them to respond effectively to the need to pursue legal and legislative reforms, (b) engage effectively with complex negotiating processes involved with trade agreements and (c) counter the power of global marketing by transnational companies that are driving the patterns of trade on NCDs risk factors in the Pacific (Magnusson and Patterson 2014; 2015).

6.4.2 Effective multisectoral approaches

Policy coherence and mutual accountability across all sectors involved in addressing NCDs is key to making multisectoral approaches in NCDs work more effectively. The Fiji, Nauru, Tonga and Vanuatu NCDs strategies emphasise the importance of multisectoral action to address NCDs effectively. Nauru, Tonga and Vanuatu have all established multisectoral national NCDs committees to oversee the implementation of their respective NCDs strategies. Fiji is in the process of finalising its national multisectoral NCDs committee, which will be chaired by the Prime Minister.

A multisectoral mechanism is, however, just a means to an end. The ability of such a mechanism to deliver depends on a range of factors including, but not limited to, the clarity of its purpose, governance arrangements and the level of resources available for implementation. Poor governance and accountability lead to weak implementation of multisectoral approaches addressing NCDs. A key impediment to progressing good policies and strategies in the Pacific is weak implementation (World Bank 2014; Magnusson and Patterson 2015). This is also the case for addressing NCDs in the Pacific, where it is not the absence of evidence for action, or lack of knowledge about effective policies, but translating knowledge into actions at the country level that hinders progress (Magnusson and Patterson 2015). Poor governance is one of the major causes of weak implementation (Magnusson and Patterson 2015).

Actions for reducing risk factors for NCDs require the involvement of a range of ministries and stakeholders outside health. In practical terms this will require governance structures to ensure policy coherence and mechanisms to formalise

and maintain government-wide commitment (Bonita *et al.* 2013; Magnusson and Patterson 2015) and a whole-of-society involvement and accountability, as only 20 per cent of health outcomes depend on the strength of healthcare systems with the rest a function of the broader determinants of health, which are addressed by stakeholders outside the health sector (World Economic Forum 2016).

Limited legal capacity at the national and regional level undermines the ability of countries to implement the necessary legal and legislative reforms to address NCDs effectively. All the national NCDs strategies have incorporated policy, fiscal, legal and legislative reform objectives. However, many of the countries lack the resources to have a full spectrum of legal and policy expertise across the health, trade and fiscal jurisdictions (Magnusson and Patterson 2014). Given the relative lack of resources in some of the Commonwealth Pacific small states, this mix of expertise may be more appropriately provided from a 'pooled' regional technical capacity, using existing regional structures and mechanisms such as the Quintilateral group,[28] the Pacific NCDs Network, Pacific Monitoring Alliance for NCDs Action and the UN Theme Group on NCDs in order to assist countries in these technical areas while they consider appropriate longer-term national-level solutions.

In the experience of the Caribbean, where 12 countries had successively established national NCDs Commissions since 2005,[29] these multisectoral bodies faced many challenges (The Healthy Caribbean Coalition 2015). Practically all the multisectoral mechanisms relied on ministries of health for technical support and/or financial support. Some did not have strategic plans, or dedicated staff and budget allocations. In some countries there was a perceived lack of political support to push reforms, and in others there was lack of interest from sectors outside of health. Many have established dedicated secretariats but were reliant on ministries of health for resourcing, while some had yet to establish dedicated secretariats. Governance arrangements and accountabilities were also not very clear in some of the mechanisms. The 12 bodies were also not able to maximise south-south co-operation arrangements to share experiences across the region.

The main lesson from the Caribbean experience is that it is not enough to just set up multisectoral mechanisms and expect them to work. Policy coherence, mutual accountability, clarity in roles and responsibilities, adequate resourcing (both human and financial), having strategic planning processes and clarity around governance arrangements are critical ingredients to successful multisectoral actions. It is also important to establish mechanisms outside of health and other government ministries where all members participate as equals. The lessons arising from the Caribbean are important for the Pacific region as it embarks on maximising the benefits from multisectoral mechanisms.

There is value in promoting south-south co-operation between the various multisectoral mechanisms from countries within the same region, or between regions such as the Pacific and Caribbean regions through sharing of information, experiences and resources. The Caribbean experience also highlights the importance of having a regional Secretariat that could help facilitate/co-ordinate the sharing of information and experiences between countries, as well as to produce regional progress reports on

agreed areas. For the Pacific, this role could probably be performed by a 'strengthened' secretariat for the Pacific NCDs Network.

At the national level, Commonwealth Pacific small states are also learning from their experience. A review of Tonga's 2010–2015 NCDs strategy identified inadequate co-ordination and cross-sectoral collaboration as the key bottleneck to implementation (Ministry of Health, Tonga, 2015). Consequently, Tonga established a new multisector governance framework to oversee the implementation of its refreshed NCDs strategy for 2015–2020, streamlining governance arrangements to one plan, one financing mechanism, one co-ordinating mechanism and one reporting mechanism (Ministry of Health, Tonga, 2015). Pursuant to a Cabinet decision, Tonga established a governance mechanism outside of government ministries that also included civil society organisations and formally established four multisectoral advisory committees, one for each of the four main NCDs risk factors (Physical Activity Advisory Committee, Healthy Eating Advisory Committee, Tobacco Control Advisory Committee and Alcohol Harm Reduction Advisory Committee). Tonga's focus on providing greater clarity on governance aims to enhance more effective implementation of NCDs interventions by multiple stakeholders across multiple sectors.

6.4.3 Financing for NCDs

The discussion on financing interventions to tackle the NCDs crises effectively needs to shift from a 'discourse on health issues and diseases' to 'the broader development paradigm acknowledging NCDs as a leading global development challenge and the single largest killer of the world's populations' in much the same way as climate financing has been discussed. Climate change and NCDs are perhaps the two most important challenges to human health and security in this century. However, the global community has yet to address a global financing mechanism to respond to the global NCDs epidemic, which is currently killing millions of people every year – far, far more than climate change at this point in time.

While the social, health and economic costs of NCDs have been recognised through various global agreements and declarations, international development funding has not kept pace with the political aspirations (Byfield and Moodie 2013). In addition, although NCDs are the leading cause of death globally and responsible for more deaths than all other causes combined for the past decade (WHO 2010), international financing for NCDs remains low in absolute and relative terms. For instance, of the US$458 billion of development assistance provided for health in developing countries between 1990 and 2014, only 1.5 per cent was allocated to NCDs, compared to 28 per cent for maternal and child health, 23 per cent for HIV/AIDS, 4 per cent for malaria and 3 per cent for tuberculosis (Dielman *et al*. 2015).

A global financing mechanism is needed to help the low and middle-income countries that carry the bulk of the burden of NCDs to address the rising NCDs epidemic more effectively. This financing mechanism can be similar to the Green Climate Fund and the Global Fund to fight HIV/AIDS, tuberculosis and malaria.

Given their unique challenges, particularly low economic resource base and small population size (Briguglio 2014), the majority of Commonwealth Pacific small

states find it difficult to finance the fight against NCDs. For many of these countries, even with the full implementation of fiscal policies and legislations that apply tax on tobacco, alcohol, and unhealthy foods, they would still not raise enough revenue to meet the financing gap they face to respond effectively to the NCDs crisis.[30] In addition, as was seen in Fiji's case, taxes on these items and health levies collected are not necessarily reinvested in the health sector.

Therefore, it was no surprise that Pacific countries at the 2016 Pacific NCDs Summit supported the proposal to create a Pacific funding mechanism (regional, bilateral and/or national) to address the financing gap and better align the level of funding to the burden of NCDs, with the target of raising US$100m for a regional NCDs response by December 2018.[31] While the Summit Outcome Document did not contain details on how the US$100 million amount was to be reached, the challenge at this point is the difficulty of attracting donor interest due to the sluggish global economy, competing priorities and doubts whether a regional financing mechanism will be more successful than existing bilateral aid programmes (UNDP 2016).

However, the Pacific NCDs financing mechanism should not be a debate about bilateral versus regional or multilateral channels of funding to countries. The underlying principle of the financing mechanism should be that it is a facility to respond to the totality of the NCDs challenge in the region. The funding does not have to be pooled into one account or managed by one entity. The funding mechanism could be designed in such a manner that it responds to, and satisfies the specific requirements of, recipient Pacific countries, donor/development partners and regional stakeholders and can utilise a mix of bilateral, regional and multilateral channels to meet those requirements. It should also capture the level of national funding that is available to ensure that external resources target genuine financing gaps. Such an approach could provide a more holistic picture of the total NCDs financing available to Pacific island countries and territories, comprising a mix of development partner and national-level funding.

A crucial element for a regional financing mechanism is determining the level of funding that would be required on an annual basis. Although the target is US$100 million by December 2018, it would still be extremely useful for all Pacific island countries to individually quantify the actual level of unmet funding needs for NCDs interventions they each have, and also to identify the proportion of the unmet need to be financed under bilateral, regional and/or multilateral channels. A similar exercise should be undertaken by regional actors to quantify the services that need to be provided through regional approaches to assist countries. The sum total of all the individual country and regional estimates could form the initial basis for an annual level of funding for NCDs.

While discussions continue on a Pacific financing mechanism for NCDs, at the national level countries are exploring mechanisms to maximise the impact of development assistance they currently receive for NCDs. For example, Tonga's new governance framework has put in place a single financing and co-ordinating mechanism for NCDs that requires development partners to channel their support for NCDs interventions through this mechanism, which will in turn support all implementing partners within and outside of health.

However, it is clear that without a dedicated financing mechanism from development partners to assist the efforts of Pacific countries to combat NCDs, the social, health and economic costs of NCDs are likely to worsen in the coming years.

6.4.4 Monitoring and evaluation

There has been some notable improvement on data on NCDs in recent years with the implementation of the WHO STEPS surveys and school-based health surveys by countries.

Some countries have also incorporated additional indicators in their respective NCDs strategies. For example, Fiji has included 38 illustrative indicators in its NCDs strategy, most to be collected quarterly, some six-monthly and some annually (MoHMS 2014). These indicators will be complemented by data collected under the STEPS and school-based health surveys collected every three to five years. Tonga has included accountability indicators to measure the country's performance against its commitments to policy, legal, legislative and fiscal reforms that will strengthen national capacity to implement priority NCDs interventions (MoH 2016). Each of the new NCDs strategies cited have built-in monitoring and evaluation frameworks to measure the rate of implementation and impact of identified activities.

The Pacific Monitoring Alliance for Non-communicable Disease Action, works to achieve three primary objectives: (i) strengthening in-country capacity for collecting, analysing and translating quality data into robust policy and action for NCDs, (ii) enhancing sustainable regional public goods by supporting investment in regional technical capacity to expand data improvement services, and (iii) pursuing robust innovation and accountability mechanisms by developing innovative NCDs monitoring systems and mutual accountability mechanisms.[32] Pacific countries are already starting to benefit from MANA through technical support provided through its partners across all three objectives. MANA is currently finalising development of the MANA Dashboard for NCD Action, which will allow countries to easily view progress against agreed key NCDs actions, including those in the NCDs Roadmap, WHO Global Action Plan on NCDs (including the best buys and the nine voluntary global NCD targets), the proposed SDGs indicators for Target 3.4.1, and the FCTC, as well as other key indicators developed at national, subregionalism and global levels (SPC 2016a). Continued efforts are also focused on strengthening national mechanisms to collect, analyse and report disaggregated data on NCDs by sex, age and location, highlighting the importance of having good-quality data from rural as well as urban areas.[33]

The Pacific NCDs network, the Pacific MANA, holds tremendous potential to revolutionise the surveillance and monitoring of NCDs interventions in the region if well supported. The outcome of MANA's work would provide a greater opportunity to evaluate the effectiveness of NCDs programmes, nationally and regionally, against agreed targets. It would also provide important information that would facilitate more effective planning and decision-making at country level on policy interventions that would bring the greatest benefits to the countries and in prioritisation of strategies and financing modalities that could be employed to achieve win-win outcomes of

reducing the prevalence and economic costs of NCDs while at the same time building the resilience of national economies.

The WHO Global Monitoring Framework for the nine Voluntary NCDs targets, with its associated 25 indicators, has been adopted by Pacific countries and has been incorporated into national NCDs strategies. However, the targets and indicators currently focus on monitoring behavioural risk factors and physiological and epidemiological outcomes, rather than accountability for implementation of the evidence-based interventions identified in the WHO Global Action Plan (Magnusson and Patterson 2014; Magnusson and Patterson 2015). This is an area that could be strengthened to include targets and indicators aimed at measuring commitment and accountability of countries in leading the fight against NCDs at national levels (Magnusson and Patterson, 2014; Magnusson and Patterson 2015).

6.4.5 Civil society engagement

Meaningful and effective engagement by civil society, including non-governmental organisations, churches, academia and community groups can help turn the tide on the NCDs crisis in the Pacific. The WHO global action plan recognises that successful action on NCDs requires actions to be taken by a broad number of stakeholders, including civil society organisations (WHO 2013b). One of the critical factors in the successful fight against HIV/AIDS, tuberculosis and malaria was the involvement of civil society organisations in national co-ordinating mechanisms to combat these major communicable diseases (Global Fund 2005).

Meaningful co-ordinated engagement of civil society organisations is currently a missing link in the Pacific architecture to address NCDs. While civil society organisations are engaged at the national level,[34] there is scope for a dedicated and co-ordinated regional coalition among Pacific civil society organisations that could unite and have a common voice on NCDs issues at the regional and global level, while assisting actions at the national levels.

The Global NCDs Alliance[35] and the Healthy Caribbean Coalition[36] are two examples of co-ordinated civil society mechanisms in the fight against NCDs.

Similar to the Caribbean model, a regional Pacific civil society alliance could be appropriate to advocate for people living with NCDs, help drive the agenda to reduce the behavioural NCDs risk factors, and hold governments and development partners accountable to regional and national NCDs strategies.

6.4.6 NCDs and poverty

NCDs and poverty continually reinforce each other and can undermine efforts to reverse the NCDs crises and eradicate poverty in the Pacific (WHO 2009; WHO 2010). Poor people often become trapped in a dangerous cycle where poverty contributes to NCDs and NCDs contribute to poverty, especially in low-income households where unhealthy behaviours, poor physical status, and the high cost of NCDs-related healthcare often lead to loss of household income (WHO 2009; WHO 2010). The chronic nature of NCDs, the cost for lifelong treatment and the higher non-clinical

costs relating to frequency of follow-up contacts and associated transport and other opportunity costs for patients put serious strain on already stretched household incomes for rural populations with NCDs (WHO 2006; WHO 2009, WHO 2010).

The high prevalence of NCDs in Commonwealth Pacific small states can exacerbate poverty, and increasing levels of poverty can further undermine efforts to halt the NCDs epidemic. The proportion of the population below the respective national poverty lines in the Commonwealth Pacific small states range from 13 per cent in Vanuatu to 35 per cent in Fiji (ADB 2016). The poverty rates for Samoa, Tonga and Tuvalu, where NCDs are particularly high, have increased in recent years (ADB 2016). The rural poor with NCDs in some Pacific countries are doubly disadvantaged as many still face a double disease burden with infectious diseases still prevalent (World Bank 2014). As poverty and NCDs have a self-reinforcing relationship with each other (WHO 2006; WHO 2009; WHO 2010), reducing poverty to achieve the first two targets of Sustainable Development Goal 1 – 'End poverty in all its forms everywhere' (UN 2015) will require, among others, halting and reversing the NCDs crisis in the region.

6.4.7 NCDs, gender and youth

Women and men have different levels of exposure and vulnerability to NCDs risk factors. Women have higher rates of obesity, are less physically active and are more vulnerable to diabetes than men, and men have a higher rate of smoking and are more likely to die from lung cancer and also have a higher risk of developing cardiovascular diseases than women (WHO 2002a, PAHO/WHO no date). The prevalence and association of the NCDs risk factors to gender in the Pacific mirrors that of the global picture, although in Nauru women have a higher smoking prevalence than men (WHO 2014b).

The combination of obesity, diabetes and physical inactivity increases the risk of women suffering from cardiovascular diseases and other NCD-related complications, such as diabetes-related blindness, amputations and kidney dysfunction. Thus, while males have a higher prevalence of cardiovascular diseases, more women tend to die from them (Bonita and Beaglehole 2014). This highlights the importance of cardiovascular disease in women, where it is responsible for many more deaths than all cancers combined (WHO 2002a).

While NCDs affect both women and men, there is a case for Pacific countries to acknowledge the importance of women's health to development and encourage clear policy interventions aimed at improving the health of women by specifically targeting physical inactivity, obesity, salt reduction, smoking, and alcohol consumption.

Most NCDs have their origins in the early years of life – during adolescence and youth (Baldwin *et al.* 2013). The WHO estimates that 70 per cent of premature deaths in adults are the result of behaviours begun during adolescence and youth, and research indicates that behaviours associated with two of the key risk factors for NCDs – tobacco and alcohol use – are likely to start or become established during adolescence (Baldwin *et al.* 2013). The prevalence of tobacco use and alcohol consumption is

increasing among adolescent and youth populations in Pacific countries, as are the rates for being overweight, adolescent obesity and physical inactivity in both boys and girls (WHO 2014b).

Therefore, Commonwealth Pacific small states should consider implementing a twin strategy aimed at (i) empowering and mainstreaming adolescents and youth as partners in the fight against NCDs and provide them with adequate resources to become advocates, educators and implementers of interventions addressing NCDs, and (ii) invest in programmes that target the promotion of good behaviours and reduction of the NCDs behavioural risk factors among adolescents and youths for implementation by young people themselves, with support from the respective multisectoral NCDs mechanisms.

6.4.8 Impact of climate change

There is increasing evidence that climate change can have direct and indirect effects on NCDs (Friel *et al*. 2010). Climate change can affect cardiovascular health. Several environmental air pollutants linked to climate change have been associated with increased hospitalisation and mortality due to cardiovascular disease (Friel *et al*. 2010). Increasing temperatures have also been associated with heat-related mortality and morbidity arising from overloading of the cardiovascular and respiratory systems. The physiological effect of increased heat exposure leads to increased core body temperature. Obesity exacerbates symptoms arising from heat exposure and obese individuals reach higher core body temperatures faster than non-obese individuals and are therefore at greater risk of heat-related mortality and morbidity (Friel *et al*. 2010).

Climate change can affect respiratory health. Changing climate conditions and increasing temperatures compromise outdoor air quality by increasing the production of tropospheric ozone, which contributes to respiratory tract irritation, leading to chronic pulmonary and lung diseases; and increasing respiratory allergic diseases such as asthma due to increased pollen, and respiratory illness associated with increased numbers of more intense bushfires particularly among susceptible groups such as asthmatics, children and the elderly (Friel *et al*. 2010).

Climate change related weather events can also affect NCDs. The projected sea level rise by the end of this century will put many Pacific island atoll countries at risk of salt water inundation (Friel *et al*. 2010). Damage to food gardens and health infrastructure may increase morbidity and mortality in people with underlying conditions such as diabetes (International Diabetes Federation 2012).

Well-designed climate change mitigation strategies can provide a win-win opportunity for climate change mitigation and contribute to reducing the prevalence of NCDs (Friel *et al*. 2010). Strategies such as renewable energy programmes or promotion of low-emission vehicles can contribute to reducing greenhouse gas emissions, improving air quality and improving respiratory and cardiovascular health (Friel *et al*. 2010).

6.4.9 Improved urban design of towns and cities

Improving urban design to incorporate cycling paths, extended walkways and exercise parks can encourage people to become more physically active, contributing to weight reduction, improved physical health, and improved respiratory and cardiovascular health (Friel *et al*. 2010). Most urban centres, towns and cities in the Commonwealth Pacific small states will continue to expand from the combined effect of rural-urban migration and urbanisation, driven in some of the countries by rapid population growth. By 2050, it is likely that there will be at least one city of over a million people in the Pacific – Port Moresby – where more than half the population currently live in informal settlements (Connell 2016). Modern urban planners can make enormous contributions to efforts to enhance physical activity and improve health, through implementing urban designs that offer greater opportunities to people to engage in different forms of physical activities. Such designs have implications for NCDs. Compact, walkable urban environments are a key mechanism to promote physical activity and reduce body mass indices, car travel, and air pollution (Popkin 2006). Workplace proximity is a major influence on the commuting decision to walk (Friel *et al*. 2010).

6.4.10 Information and communications technology

Emerging opportunities in ICT can help revolutionise the delivery of health promotion and healthcare services to people with NCDs in rural and remote communities in the Pacific. The last ten years have seen significant growth in the ICT penetration and diffusion in the Pacific region, highlighting the opportunity it offers to improve the delivery of diagnostic and treatment services to people living with NCDs and other ailments in remote communities (see chapter 7).

ICT enables online communication about medical issues and diagnosis of complicated diseases and their management by linking health practitioners who are separated geographically (Shiferaw *et al*. 2012). ICT can also facilitate dissemination of public health information on major public health threats; facilitate collaboration and co-operation among health workers particularly in rural and remote areas, including sharing of learning and training approaches; strengthen the ability to monitor the incidence of public health threats and respond in a more timely and effective manner; and improve the efficiency of administrative systems in healthcare facilities (Chetley, InfoDev, 2006). These technologies exist now in the Pacific and in time, under the right conditions and an enabling environment, could potentially revolutionise the delivery of health services to rural and remote communities, including in the fight against NCDs.

6.5 Looking to 2050

The Framework for Pacific Regionalism (PIFS 2014a) approved by Pacific Islands Forum Leaders in 2014 lays out the vision for the Pacific region:

> *a region of peace, harmony, security, social inclusion, and prosperity, so that all Pacific people can lead free, healthy, and productive lives.*

The current NCDs crisis, if not halted or reversed, will undermine the Pacific region's ability to achieve the SDGs and the overall Pacific Vision.

6.5.1 Two possible paths to 2050

Looking to 2050, the ability of the Commonwealth Pacific small states to achieve the SDGs and the overall Pacific Vision will depend in part on choices made by their leaders and people on how they tackle, among other things, the NCDs epidemic. One of two scenarios can be expected to occur.

Deterioration

The first possible scenario, and one which is more likely to occur unless the current NCDs epidemic is halted and reversed, is the deterioration in the health and economic livelihoods of the countries. Under this scenario, the potential negative impact of NCDs on each country's social and economic future is not fully appreciated, resulting in ineffective political leadership in addressing the NCD epidemic. The necessary legal and fiscal reforms required to enhance effective implementation of the priority NCD interventions agreed internationally, regionally and nationally are not in place. Multisectoral NCD strategies do not achieve their full potential due to inadequate buy-in, resourcing and ownership from other sectors and partners. The fight against NCDs is relegated to a 'health only issue, rather than a priority development challenge for the nation' to be fought by already struggling and under-resourced health ministries. Political leaders, government ministries, the private sector and civil society organisations are oblivious and indifferent to the human and economic costs posed by NCDs. Multinational companies continue at will to push products that are known causes of NCD risk factors, including tobacco products, alcohol, sugar, salt and fatty products. The NCDs epidemic gathers momentum. Poverty worsens. Economic performance of countries deteriorate as the NCDs epidemic continues to undermine the quantity and quality of the countries' workforce through NCD-related mortality and morbidity. The ability of the countries to achieve the SDGs by 2030 and the Forum Leaders' Vision for the region by 2050 becomes more difficult.

Transformation

The second possible outcome and the one which the Commonwealth Pacific small states desire is that of transformation. Transformation reflects the harnessing of sufficient political will to lead the fight against NCDs. Under this scenario, there is explicit political leadership driving the NCDs agenda. The necessary legal and fiscal reforms required to enhance effective implementation of the priority NCD interventions agreed internationally, regionally and nationally are in place. National capacity and expertise is built and retained across a range of disciplines at the national levels, including but not limited to, expertise in public health law, health economics and policy, trade law and policy, commerce law and policy, fiscal policy and regulations and WTO rules and regulations to enable countries to (a) respond effectively to the need to pursue legal and legislative reforms, (b) engage effectively with complex negotiating processes involved with trade agreements and (c) counter the power of global marketing by transnational companies that are driving the patterns

of trade on NCDs risk factors in the Pacific. Mandated mechanisms are established to ensure there is policy coherence aimed at protecting health, while generating trade for economic development. The potential human, social and economic costs of NCDs are understood by the whole society. The fight against NCDs becomes everybody's business – a whole-of-government and whole-of-society undertaking inclusive of government sectors, the private sector, faith-based organisations, non-governmental organisations, community-based organisations, other civil society organisations and development partners. Multisectoral NCD strategies reflect policy coherence with other sectors and partners and are effectively implemented, monitored and evaluated. The countries adopt a 'many partners and one team approach' guided by one plan, one financing mechanism, one co-ordination mechanism, and one monitoring and evaluation mechanism that clearly articulates appropriate governance arrangements and clarity on the respective roles and responsibilities of all stakeholders involved in the fight against NCDs. Multinational companies follow due process. The NCDs epidemic is halted and reversed. Poverty levels diminish. The economic performance of countries improves as the quantity and quality of the countries' workforce increases due to the reduction of NCD-related mortality and morbidity. The countries are on a better trajectory to achieve the SDGs by 2030 and the Forum Leaders' Vision for the region by 2050.

6.5.2 Political leadership is key to the fight against NCDs toward 2050

Political leadership is key to the path to transformation. The Pacific NCDs Roadmap emphasised that it was important that Heads of State take national responsibility in the battle against NCDs, highlighting their authority and convening power in bringing all stakeholders together to tackle NCDs. This would send a strong signal to the nation, to development partners, and in particular to transnational corporations pushing NCDs risk factors, that protecting the health and lives of people was paramount (World Bank 2014). Presidents, Prime Ministers and senior cabinet members need to become personally involved in the fight against NCDs - their leadership should be directed towards framing NCDs as an obstacle to national economic and social development, and to fostering an intersectoral, government-wide response (Magnusson and Patterson 2014; Bonita *et al.* 2013). Institutionalising and formalising mechanisms are also vital to ensure that NCDs do not fall off the political agenda.

While there is a high level of political capital at the regional level to address the NCDs epidemic, as evident in the various declarations since 2011,[37] the translation of these political commitments into effective action at the national level has been uneven, with some countries making more progress than others (Magnusson and Patterson 2015). For example, in the two years since the adoption of the Pacific NCDs Roadmap in 2014, only four of the nine countries (Fiji, Nauru, Tonga and Vanuatu) have completed and are implementing their national Roadmaps/NCDs strategic plans. Looking to 2050, this needs to change. Strong political leadership will be needed to achieve effective whole-of-government and whole-of-society action to curb the NCDs epidemic and ensure that Commonwealth Pacific small states are on a trajectory to achieve the SDGs and the Forum Leaders' Vision for the Pacific.

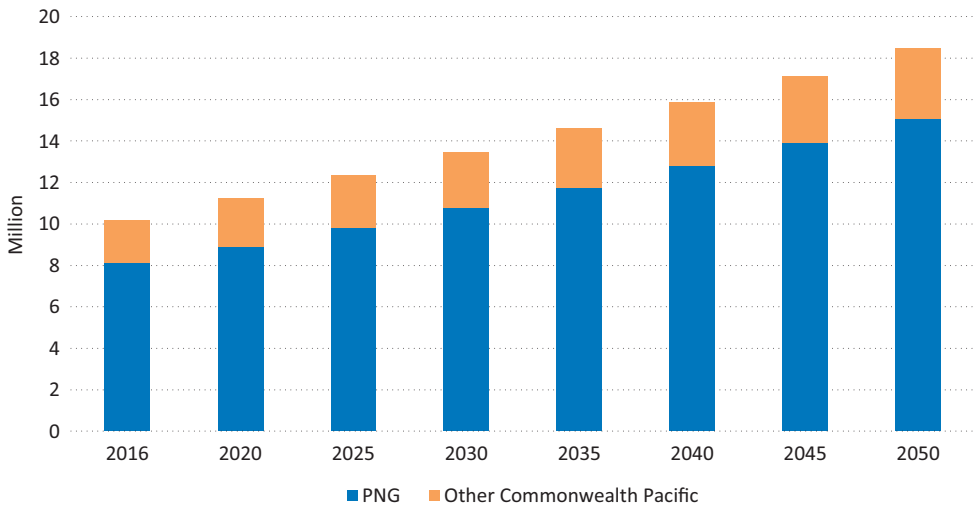
6.5.3 Population growth to drive rising NCDs prevalence

Population growth will have a varying impact on the prevalence of NCDs in the Commonwealth Pacific small states in the period leading up to 2050. Population growth impacts NCDs in two ways. First, it increases the total pool of people of all age groups that are exposed to NCD risk factors. Secondly, improving longevity and life expectancy raises the population that are above 60 years of age, who are more prone to NCDs.

The total population of the Commonwealth Pacific small states is projected to almost double from an estimated 10.2 million people in 2015 to about 18.5 million by 2050, led by the projected population growth of PNG (Figure 6.9) (SPC 2016b). The projected population growth of each of the countries can be characterised by five broad patterns, ranging from very rapid population growth in Solomon Islands to negative population growth in Tonga (Table 6.2). Solomon Islands is expected to surpass Fiji as the second most populated country in the Pacific by 2031.

Each growth pattern presents different implications for NCDs prevalence in each country. Countries that are expected to exhibit a very rapid or rapid population growth (Solomon Islands, Vanuatu, PNG and Kiribati) are likely to face huge challenges in responding to the NCDs crisis. This will result from the combined effect of the rapidly increasing pool of the general population that are exposed to the NCD risk factors, and the increasing numbers of the aged population vulnerable to NCDs, if measures are not in place to curb the NCDs prevalence in these countries. Even for those countries that face a slow to negative trend in population growth (Fiji, Tuvalu and Tonga), the impact of NCDs on the aging population will continue to be a challenge.

Figure 6.9 Commonwealth Pacific population projection to 2050



Source: SPC 2016b

Table 6.2 Population projection by country

	2016	2020	2030	2040	2050	Population growth
PNG	8,151,300	8,901,200	10,790,800	12,798,600	15,057,600	Rapid
Fiji	880,400	895,400	918,700	927,900	924,700	Slow
Solomon Is	651,700	714,800	902,300	1,123,600	1,351,600	Very rapid
Vanuatu	289,700	319,500	397,300	479,500	561,900	Rapid
Samoa	194,000	199,300	212,700	227,800	239,100	Medium
Kiribati	112,900	125,100	149,800	174,800	200,800	Rapid
Tonga	100,600	100,000	98,400	96,700	93,600	Negative
Nauru	10,800	11,200	12,100	13,200	14,200	Medium
Tuvalu	10,100	10,300	10,600	10,600	10,600	Slow

Source: SPC 2016b

Rapid population growth is also likely to drive rapid unplanned urbanisation and increasing levels of urban poverty (see chapter 8), both of which also drive NCDs. For the countries that are projected to have very rapid or rapid population growth, implementing effective policies to manage population growth can make significant contributions to efforts aimed at reducing NCDs. Such policies may also have the added bonus of decreasing poverty and reducing the rate of unplanned urbanisation.

6.5.4 Rising NCDs prevalence to drive rising costs of NCDs

The cost of treating NCDs is expected to rise if efforts to tackle the NCDs epidemic are not successful. For countries where population growth is projected to be very rapid or rapid in the period leading up to 2050, the cost of treating NCDs is expected to grow significantly as a result of increases in NCDs prevalence that are spurred by population growth. Notably for these countries, even if the NCDs prevalence remains unchanged or is reduced at a rate that is lower than the rate of population growth in the period to 2050, the costs of treating NCDs will still grow substantially as a result of population growth. However, for countries projected to record low or negative population growth (Fiji, Tuvalu, Tonga), the impact of population growth on NCDs prevalence is likely to be low. Thus, for these countries, the cost of treating NCDs is unlikely to be as high compared to countries with a projected high population growth.

To illustrate, using the 'cost per person year' estimates from previous studies,[38] the potential annual cost of treating adult (age 20 years and over) diabetes in Vanuatu, Solomon Islands and Nauru for 2050 is calculated based on three hypothetical scenarios (see Appendix 6.1 for details on calculations):

- Scenario 1: diabetes prevalence declines by 1.5 percentage points every five years
- Scenario 2: diabetes prevalence remains unchanged
- Scenario 3: diabetes prevalence increases by 1.5 percentage points every five years

In scenario 1 where the diabetes prevalence declines, the estimated adult population with diabetes in the Solomon Islands and Nauru is projected to decline in tandem

Table 6.3 Estimated adult population with diabetes prevalence to 2050

	2015	2020	2025	2030	2035	2040	2045	2050
SCENARIO 1								
Vanuatu	28,134	30,163	31,743	33,016	33,646	33,610	32,623	30,645
Solomon Is	52,973	55,534	57,812	59,455	59,638	58,204	55,050	49,951
Nauru	1,334	1,306	1,307	1,289	1,278	1,237	1,190	1,140
SCENARIO 2								
Vanuatu	28,134	32,748	37,695	43,262	49,175	55,530	61,983	68,500
Solomon Is	52,973	60,978	70,379	81,207	92,770	105,143	118,570	133,202
Nauru	1,334	1,392	1,490	1,579	1,693	1,782	1,880	1,996
SCENARIO 3								
Vanuatu	28,134	35,334	43,647	53,508	64,704	77,450	91,343	106,355
Solomon Is	52,973	66,423	82,947	102,959	125,902	152,082	182,090	216,454
Nauru	1,334	1,477	1,672	1,869	2,108	2,328	2,571	2,851

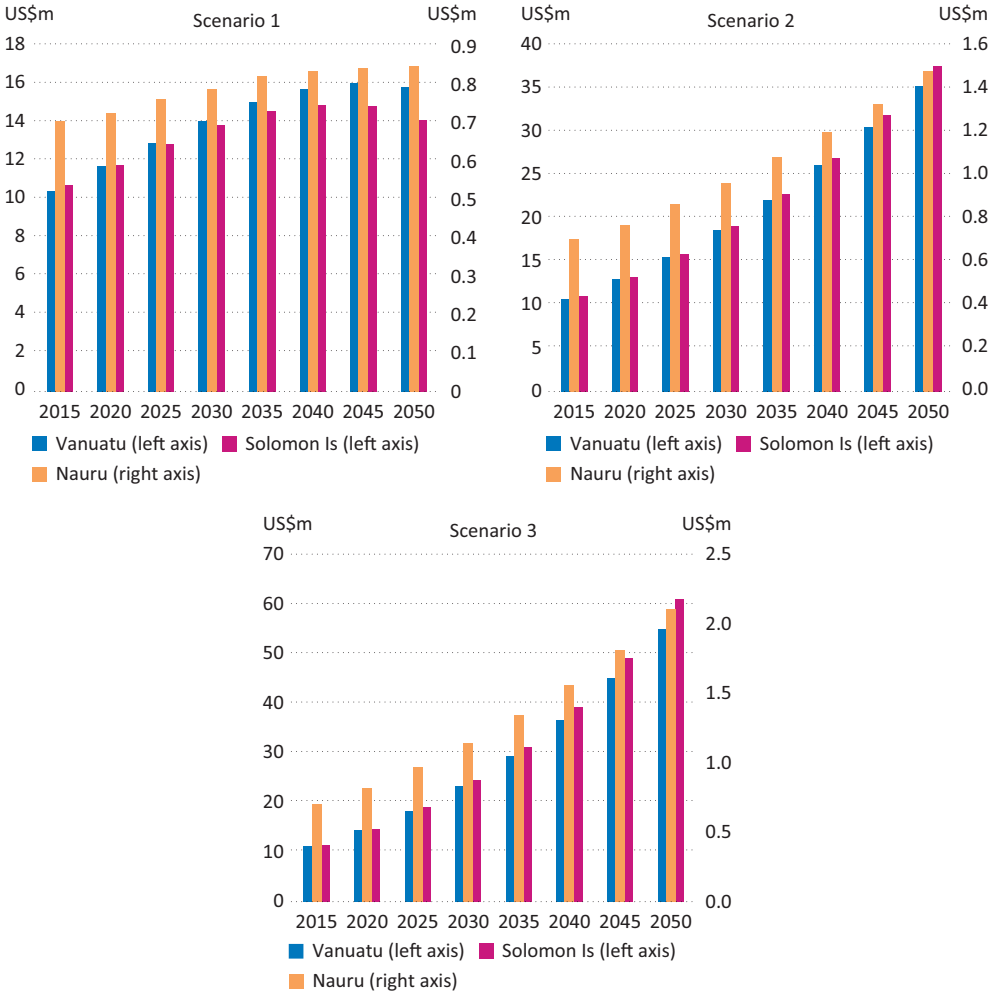
Source: Author's calculations

in the period to 2050 (Table 6.3). In contrast, the estimated diabetes prevalence in Vanuatu is projected to increase by 9 per cent to 30,645 in 2050 compared to 2015 (Table 6.3), as the population growth rate far outpaces the decline in the diabetes prevalence rate. An important observation under this scenario is that despite the decline in diabetes prevalence, the annual cost for treating diabetes is projected to increase for all three countries, mainly due to inflation (Figure 6.10).

In scenario 2 (diabetes prevalence remains unchanged), the estimated adult populations with diabetes in Vanuatu, Solomon Islands and Nauru are all projected to increase in 2050 despite the diabetes prevalence remaining the same (Table 6.3). The increases are driven entirely by population growth in the three countries. The estimated cost for treating diabetes is also projected to increase for all three countries in 2050 due to rising prevalence, as well as inflation. An important observation under this scenario is that even with no increase in the prevalence of diabetes, both the numbers of adults with diabetes and the cost of treating diabetes will continue to increase significantly due to population growth. This observation highlights the importance of addressing population growth as an important component of managing the prevalence of diabetes and NCDs, particularly in countries that are projected to have rapid population growth between 2016 and 2050.

In scenario 3 (diabetes prevalence increases), the estimated adult population with diabetes and the cost of treatment are projected to increase markedly in all three countries. In the context of the current NCDs epidemic, this is the more likely scenario of the three to occur if countries are not able to halt or reverse the NCDs epidemic. The pressure on government's health expenditure is also expected to increase significantly. For example, the cost for treating diabetes in Solomon Islands and Nauru was estimated at 20 per cent of the total annual healthcare expenditure in both countries in 2011 (Win Tin *et al*. 2015). Based on these estimates, under this scenario, the likely total healthcare expenditure for Solomon Islands and Nauru in 2050 is projected be around US$300 million and US$10 million, respectively.

Figure 6.10 Estimated cost of treating diabetes to 2050



Source: Author's calculations

Indeed, in a recent study, the World Bank (2016) found that the economic burden of NCDs will increase with time, especially as incomes rise.

The World Bank projected that the 2030 economic burden of NCDs for PNG, Vanuatu, Tonga, Fiji and Tuvalu will be significantly higher than the middle-income average burden. For Kiribati, Samoa, and Solomon Islands, the economic burden of NCDs is expected to be close to the middle-income average burden in 2030. If no action is taken, the economic burden of NCDs for all countries is expected to escalate by 2040 (World Bank 2016).

The World Bank (2016) also reported that although cardiovascular disease is the biggest contributor to the mortality burden in the region, diabetes plays a far greater role in Pacific countries. Diabetes contributes to an average 24 per cent of the lost economic output, compared to the global average of 6 per cent, with Vanuatu

projected to suffer the highest diabetes burden, at roughly 38 per cent in 2040, even higher than the economic burden from cardiovascular disease at 31 per cent.

Furthermore, the World Bank (2016) estimated that in the absence of the four biggest NCDs, the labour force could be at least 9 to 30 per cent larger by 2040. The World Bank also demonstrated that reducing the NCDs prevalence by 6 per cent over the previous year, with a discount rate of 5 per cent, resulted in downward trends of NCDs morbidity for all countries, except Papua New Guinea, Solomon Islands, and Vanuatu, such that by 2040 the economic burden would actually be less than the 2015 burden estimates as a proportion of GDP (World Bank 2016).

The key message from the World Bank study is that it is possible to reduce the NCDs burden and bend the economic cost curve, but countries and their development partners must adopt greater urgency in tackling the NCDs crisis. The ability of the Commonwealth Pacific small states to achieve the SDGs and the Pacific Vision by 2050 will depend in part on the decisions and actions they take to tackle the NCDs crisis currently engulfing the region.

6.6 Key recommendations

The following recommendations are made in the context that there is a WHO NCDs Global Action Plan in place that lists nine voluntary global targets to be achieved by 2025, as well as the NCDs-related target of SDG3 to be achieved by 2030. Commonwealth Pacific small states have also agreed to implement the WHO Framework Convention on Tobacco Control, the WHO Global Strategy to Reduce the Harmful Use of Alcohol, the WHO Global Strategy on Diet, Physical Activity and Health, and the Pacific NCDs Roadmap. The recommendations therefore focus only on addressing the gaps identified in the previous sections and, if implemented, would help unlock the constraints to effective implementation of policy interventions. This will help the Commonwealth Pacific small states to halt and reverse the current NCDs epidemic and put them on a trajectory of social and economic growth to achieve the SDGs and the Forum Leaders' Vision for the Pacific.

6.6.1 National-level actions

Strengthen and expand the scope of national NCDs strategies. It is important to bridge major gaps in existing NCD strategies, and this can be achieved by incorporating some or all of the following areas into existing or new national NCD strategies:

- Priority upstream policy areas such as trade and legal reforms, including for instance implementing the WHO FCTC guidelines on plain packaging of tobacco products;
- Broader social and environmental determinants of health and NCDs, such as poverty, gender, population growth and climate change;
- Opportunities that could strengthen national efforts to combat NCDs, such as harnessing the energy of civil society, broader use of ICT and strategic utilisation of available regional services; and

- Accountability indicators to measure national efforts in formulating and implementing relevant policy, fiscal, legal and legislative reforms that enhance national efforts to address NCDs more effectively.

Establish a mandated health and trade committee. This committee needs to be established under a legal or political mandate with the associated institutional arrangements to ensure ongoing co-operation between the trade and health ministries. The primary role of the Committee would be to ensure that there is policy coherence aimed at protecting health while generating trade for economic development.

Ensure effective implementation of multisectoral strategies. Poor policy coherence and weak implementation have been identified as key impediments to addressing NCDs effectively in the Pacific. Therefore, it is important to enhance the effective implementation of multisectoral NCDs strategies, commencing at the design stage where all implementing partners in all sectors must be equally involved, through to implementation and the monitoring and evaluation of results. The outcome of the collaborative design process should result in the identification of final outcomes that need to be achieved to reverse the NCDs epidemic, the alignment of respective sector policies to ensure that the final outcome is achieved (policy coherence), the appropriate governance and co-ordination arrangements that need to be implemented, and the respective roles, responsibilities and accountabilities of all partners and stakeholders involved.

Establish or strengthen core national capacity in a range of disciplines. Effective implementation of the priority actions articulated in the WHO NCDs Global Action Plan and the Pacific NCDs Roadmap requires expertise and capacity across a range of disciplines, including but not limited to, expertise in public health law, health economics and policy, trade law and policy, commerce law and policy, fiscal policy and regulations, and WTO rules and regulations. Building such cross-cutting national capability will enable countries to undertake necessary policy and legal reforms that can facilitate implementation of key NCDs interventions, engage effectively with complex trade negotiating processes, and more effectively counteract the power of global marketing by transnational companies that drives the trade of products that increase NCDs risk factors.

Address rapid population growth. For countries whose populations are projected to grow rapidly, particularly Solomon Islands (World Bank 2016), Vanuatu, Papua New Guinea and Kiribati, it is recommended that effective polices are implemented to manage population growth. Rapid population growth increases the total pool of people in all age groups that are exposed to NCD risk factors, and could potentially increase the pool of people above 60 years of age who are more prone to NCDs. Managing population growth will also bring dividends in addressing poverty and unplanned urbanisation.

Accord stronger focus to women's health. While NCDs affect both women and men, there is a strong case for Pacific countries to acknowledge the importance of women's health to development. While males have a higher prevalence of cardiovascular diseases, more women tend to die from it, highlighting the importance of cardiovascular

diseases in women. The combination of obesity, diabetes and physical inactivity increases the risk of women suffering from cardiovascular diseases and other NCD-related complications, such as diabetes-related blindness, amputations and kidney dysfunction. Therefore, it is important to step up efforts to put in place clear policy interventions aimed at improving the health of women by specifically targeting salt reduction, smoking and alcohol consumption, physical inactivity and obesity.

Acknowledge and engage adolescents and youth as assets in the fight against NCDs. Considering that about 70 per cent of all premature deaths from NCDs in adults are the result of behaviours begun during adolescence and youth, it is recommended that countries consider implementing a twin strategy aimed at empowering, mainstreaming and resourcing adolescents and youths as partners in the fight against NCDs; and invest in educational programmes that target and are implemented by adolescents and youths, with support from the respective multisectoral NCDs mechanisms.

Encourage well-designed climate change mitigation strategies for win-win outcomes. Climate change programmes can be designed to also contribute to reducing the prevalence of NCDs, such as renewable energy strategies and programmes, or the promotion of low-emission vehicles that can contribute to reducing greenhouse gas emissions and improving air quality and, in turn, improving respiratory and cardiovascular health.

Improved urban design of towns and cities. Modern urban planning and design, by incorporating cycling paths, extended walkways and exercise parks, can encourage people to become more physically active, contributing to weight reduction, improved physical health, and improved respiratory and cardiovascular health.

Embrace ICTs in combating NCDs. ICTs have tremendous potential to increase service outreach and delivery of health promotion and healthcare services to people with NCDs in rural and remote communities. ICTs enable online communication about medical issues and diagnosis of diseases and their management by linking health practitioners who are separated geographically. ICTs can also facilitate dissemination of public health information about major public health threats.

Quantify the unmet NCDs funding needs at the national level. There is currently general agreement for the establishment of a Pacific NCDs financing mechanism, with an initial target to raise US$100 million by December 2018. To this end, it is recommended that countries quantify the actual level of their unmet financing gap for NCDs, and also identify how much of the financing gap, if provided, should be channelled through bilateral, regional and/or multilateral means.

6.6.2 Regional-level actions

Quantify the unmet NCDs funding needs at the regional level. Some interventions on NCDs are best provided regionally. To this end, it is recommended that regional actors that are helping countries to combat NCDs also need to quantify their unmet financing needs to support countries effectively. The total unmet financing needs at the national and regional levels could form the basis of the total funding envelope

needed to tackle NCDs in Pacific island countries and territories, which could provide the basis for the total amount of funds that could be mobilised through a Pacific or global NCDs financing mechanism.

Support national efforts to achieve the 'Tobacco Free Pacific by 2025' target. To help Pacific countries and territories to measure progress against the 2025 tobacco-free Pacific target, it is recommended that the WHO and SPC work closely with Pacific Heads of Health to agree on a few key milestones and indicators to guide countries in their efforts towards achieving the 2025 target for consideration by Pacific Health Ministers at their next meeting in 2017.

Strengthen and expand the scope of the Pacific NCDs Network. The Pacific NCDs Network should be further strengthened and expanded to provide a 'virtual' secretariat for enhancing south-south co-operation between the various national multisectoral NCDs committees in the various countries. As each country strengthens its co-ordination and governance mechanisms, there is value to be gained through effective sharing of information and lessons between the respective national co-ordinating mechanisms through enhanced south-south co-operation. The Pacific NCDs Network is best placed to assume this 'virtual' co-ordinating role to facilitate and strengthen south-south co-operation between the different national co-ordinating mechanisms. The expanded scope of the Pacific NCDs network can also support the important work provided by the members of the Quintilateral group, UNDP and other UN Agencies by contributing to the pool of regionally available technical capacity to support Pacific countries in implementing their NCDs strategies.

Establish a Pacific NCDs Civil Society Alliance. It is recommended that national and regional civil society organisations, with a focus or interest in health and/or NCDs issues, consider forming a regional alliance or network to combat NCDs. While civil society organisations are engaged at the national level as members of the various multisectoral mechanisms, a dedicated regional civil society mechanism is missing. Similar to the Global NCDs Alliance and Healthy Caribbean Coalition, a dedicated regional Pacific NCDs Alliance can advocate for people living with NCDs, help drive the agenda to reduce the behavioural NCDs risk factors, and hold governments and development partners accountable to regional and national NCDs strategies.

6.6.3 International-level action

Establish a dedicated Global Financing Mechanism for NCDs. Over the past decade, NCDs have been the world's single largest killer, responsible for more deaths than all other causes combined. Therefore, as a matter of urgency it is recommended that the global community establish a dedicated global financing mechanism for NCDs, similar to the Global Fund to Fight Aids, Tuberculosis and Malaria (GFATM) and Green Climate Fund. The GFATM was instrumental in curbing HIV/AIDS, tuberculosis and malaria, while the Green Climate Fund is expected to help countries in adaptation and mitigation practices to counter climate change. Similarly, a Global Fund for NCDs can help combat NCDs at the global level. Such a facility, if established, can supplement regional and national financial mechanisms, including the Pacific NCDs financing mechanism.

Notes

1 This chapter benefited from valuable comments from the Secretariat of the Pacific Community, UNDP (Ferdinand J. Strobel), WHO and the Commonwealth Secretariat (Resina Katafono, Stephen Dorey, Denny Lewis-Bynoe and Motselisi Matsela).
2 The Pacific Islands Forum is made up of Commonwealth Pacific small states plus Cook Islands, Federated States of Micronesia, Niue, Republic of the Marshall Islands and Palau.
3 'Our Pacific Vision is for a region of peace, harmony, security, social inclusion, and prosperity, so that all Pacific people can lead free, healthy, and productive lives'.
4 Ischaemic heart diseases are also known as coronary heart disease characterised by reduction of blood flow to the heart and can cause angina, heart attack and heart failure (NHS, UK, 2016).
5 Dr Colin Tukuitonga, Director General Secretariat of the Pacific Community (SPC) remarks at the 2016 Pacific NCDs Summit. Available at: http://www.spc.int/en/speeches/2532--pacific-community-remarks-by-director-general-dr-colin-tukuitonga-at-the-opening-ceremony-of-the-pacific-ncd-summit.html
6 Body Mass Index equal to or greater than 25.
7 Body Mass Index equal to or greater than 30.
8 Physical inactivity in adults is defined as less than 150 minutes of moderate-intensity physical activity per week or less than 75 minutes of vigorous-intensity physical activity per week. Physical inactivity in children / adolescents (5–17 years) is defined as less than 60 minutes of moderate-intensity physical activity per day, available at: http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979_eng.pdf.
9 Dr Anders Dejgaard, Managing Director of the World Diabetes Foundation, statement at the 2016 Pacific NCDs Summit (WDF 2016), Available at: http://www.worlddiabetesfoundation.org/news/tonga-call-ncd-action-echoes-across-pacific.
10 US$362 is the equivalent USD value in 2015 of the original 2012 figure US$347, converted using a web-based cost converter version 1.5 (CCEMG – EPPI-Centre Cost Converter version.1.5, 2016), which converts costs for years and currency to align costs to the same currency in 2015 for comparability.
11 Also known as the SAMOA Pathway (see United Nations, 2014a).
12 United Nations Pacific Interagency Task Force on Non-communicable Disease Prevention and Control, available at: http://www.sids2014.org/index.php?page=view&type=1006&nr=2736&menu=1507)
13 Pacific NCDs Partnership, available at: http://www.sids2014.org/index.php?page=view&type=1006&nr=2759&menu=1507
14 Current members of the Pacific NCDs Partnership / Pacific NCDs network include Pacific Islands Forum Leaders, Pacific Islands Permanent Missions at the UN, Pacific Ministers of Health, Pacific Island Countries and Territories, Pacific Islands Forum Secretariat, Australian Aid programme, New Zealand Aid programme, US Aid programme, The World Bank, UNDP, Pacific Island Health Officers' Association, NCDs Alliance, WHO and SPC.
15 Pacific NCDs Network, available at: http://www.pacificncdnetwork.org/
16 MANA available at http://www.pacificncdnetwork.org/pacific-mana.html
17 Helen Clark, UNDP Administrator, Keynote Address at Pacific NCDs Summit, 2016. Available at; http://www.undp.org/content/undp/en/home/presscenter/speeches/2016/06/20/helen-clark-keynote-address-non-communicable-diseases-a-sustainable-development-priority-for-pacific-island-countries-.html
18 New NCD strategies for Fiji, Nauru, Tonga and Vanuatu
19 Helen Clark, UNDP Administrator, Keynote Address at Pacific NCDs Summit, 2016.
20 Dr Paula Vivili, Director of Public Health, SPC (phone consultation – 5 October 2016)
21 World Health Organization, 2003, WHO framework convention on tobacco control. Geneva (CH): World Health Organization; 2003 available at: http://apps.who.int/iris/bitstream/10665/42811/1/9241591013.pdf
22 Fiji, Ministry of Economy, 2016 – Supplement to the 2016–2017 Budget
23 Samoa, Ministry of Health, 2014

24 Known as PACER Plus, in force since 2002, it is a 'framework agreement' for trade and economic integration between Pacific Island Countries Trade Agreement (PICTA) members and Australia and New Zealand. PACER Plus is still being negotiated between the Pacific island countries and Australia and New Zealand. PICTA is a regional free trade agreement between members of the Pacific Islands Forum countries (excluding Australia and New Zealand) that commits the member countries to phasing out barriers to trade, including tariffs and non-tariff barriers.
25 Currently being negotiated between the European Union and the African, Caribbean and Pacific Group of States.
26 This is a trade agreement among 12 Pacific Rim countries - Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States, and Vietnam (not including China). It was signed on 4 February 2016 and is awaiting ratification to enter into force. It aims to 'promote economic growth; support the creation and retention of jobs; enhance innovation, productivity and competitiveness; raise living standards; reduce poverty in the signatories' countries; and promote transparency, good governance, and enhanced labour and environmental protections'. It contains measures to lower both non-tariff and tariff barriers to trade and establish an investor-state dispute settlement mechanism.
27 Helen Clark, UNDP Administrator, Key Note Address at Pacific NCDs Summit, 2016
28 An informal group of partners comprising WHO, SPC, the World Bank, Australia and New Zealand.
29 Bermuda (2005), Barbados (2007), Dominica (2008), Belize (2009), Grenada (2010), Jamaica (2011), Trinidad & Tobago (2011), Bahamas (2013), St Lucia (2013), British Virgin Islands (2013), St Kitts & Nevis (2014) and Guyana (2014).
30 Hon. Nandi Glassie, Cook Islands Minister of Health, Justice and Parliamentary Services, statement at the 2016 Pacific NCDs Summit, available at http://www.mic.gov.to/news-today/press-releases/6114-exploring-pacific-funding-mechanism-option-to-help-turn-the-tide-on-ncds
31 Pacific NCDs Summit 2016 (Tonga), Outcome statement, SPC, 2016c
32 MANA, available at http://www.pacificncdnetwork.org/pacific-mana.html
33 MANA, available at http://www.pacificncdnetwork.org/pacific-mana.html
34 National NCD strategies – Fiji, Nauru, Tonga, Vanuatu
35 The Global NCDs Alliance, established in 2009, is a unique civil society network uniting 2,000 civil society organisations in more than 170 countries with a mission to combat the NCDs epidemic. See https://ncdalliance.org/who-we-are
36 The Healthy Caribbean Coalition is a regional civil society alliance established in 2008, comprising more than 40 Caribbean-based health non-government organisations to combat chronic diseases and work to advocate for and support NCDs risk factor reduction in the Caribbean region (Health Caribbean Coalition 2016).
37 The 2011 declaration of the Pacific NCDs crises (WHO & SPC 2011a; PIFS 2011), the 2013 adoption of the 'Tobacco free Pacific by 2025' target (WHO & SPC 2013), the 2014 adoption of the Pacific NCDs Roadmap (PIFS, 2014b), and the support for a Pacific Financing Mechanism (Outcome Statement, Pacific NCDs Summit 2016, SPC 2016c).
38 World Bank, 2012, for Vanuatu and Win Tin et al., 2015, for Solomon Islands and Nauru

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Appendix 6.1

The potential annual costs of treating adult (age 20 years and over) diabetes in Vanuatu, Solomon Islands and Nauru for 2050 for the three different scenarios (declining trend, no change, increasing trend) were based on the underlying calculations:

- The 'estimated adult population of 20 years and over' was sourced from SPC's revised '2016 Pacific island countries population projections' (SPC, 2016b). Fifty per cent of the population for the 15–24 age bracket was assumed as comprising the population of people aged between 20–24 years. This population was added to the populations in the 25–59 years age bracket and the 60 years plus age bracket to obtain the total '20 years and over population' for all three countries.
- The prevalence rates published by WHO in its 2014 Global Status Report on NCDs (WHO 2014b) were used as the '*starting*' 2015 prevalence rates for the three countries. While these rates are not the 2015 rates, they are the closest rates to 2015 at the time of writing and they are used purely to demonstrate the probable trends in each of the three scenarios in each country.
- The estimated 'adult population with diabetes' in each country was obtained by applying the respective prevalence rates for the three countries as percentages of the estimated total adult population.
- The 'cost per person year' for each country was standardised in US dollars. The costs were converted to '2015 United States dollar (US$) values' from 2011 Australian dollar (AUD) values for Solomon Islands and Nauru, and 2012 US$ values for Vanuatu using a web-based cost converter version 1.5 (CCEMG – EPPI-Centre Cost Converter version.1.5, 2016), which converts costs for years and currency to align all three costs to the same currency (US$) in 2015 for comparability.

The calculations are provided in the tables below:

Table A6.1 Estimated cost for treating diabetes in Vanuatu, US$ million

		2015	2020	2025	2030	2035	2040	2045	2050
	SCENARIO 1 Decreasing diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	148,075	172,360	198,395	227,695	258,815	292,265	326,225	360,525
B	Diabetes prevalence rate (%) – projected at 1.5% reduction every 5 years from 2015 (using the WHO estimated prevalence of 19% in the 2014 Global Status Report on NCDs as the starting value for 2015)	19	17.5	16	14.5	13	11.5	10	8.5
C	Estimated adult population with diabetes: C=(A/100 × B)	28,134	30,163	31,743	33,016	33,646	33,610	32,623	30,645
D	Cost per person year in US dollars, adjusted to 2015 value and escalated at 5% inflation increase every 5 years from 2015	362	380	399	419	440	462	485	509
E	Estimated total Annual national cost (in US$): E=[C × D]	10,184,599	11,464,956	12,668,870	13,835,599	14,804,664	15,528,507	15,825,652	15,609,463
	SCENARIO 2 No change in diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	148,075	172,360	198,395	227,695	258,815	292,265	326,225	360,525

(*Continued*)

Table A6.1 Estimated cost for treating diabetes in Vanuatu, US$ million (*Continued*)

		2015	2020	2025	2030	2035	2040	2045	2050
B	Diabetes prevalence rate (%) – projected at no change from 2015 (using the WHO estimated prevalence of 19% in the 2014 Global Status Report on NCDs as the value for 2015)	19	19	19	19	19	19	19	19
C	Estimated adult population with diabetes: C=(A/100 × B)	28,134	32,748	37,695	43,262	49,175	55,530	61,983	68,500
D	Cost per person year in US dollars, adjusted to 2015 value and escalated at 5% inflation increase every 5 years from 2015	362	380	399	419	440	462	485	509
E	Estimated total Annual national cost (in US$): E=[C × D]	10,184,599	12,447,667	15,044,283	18,129,405	21,637,586	25,655,795	30,068,738	34,891,742
	SCENARIO 3 Increasing diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	148,075	172,360	198,395	227,695	258,815	292,265	326,225	360,525
B	Diabetes prevalence rate (%) – projected at 1.5% increase every 5 years from 2015 (using the WHO estimated prevalence of 19% in the 2014 Global Status Report on NCDs as the starting value for 2015)	19	20.5	22	23.5	25	26.5	28	29.5

Table A6.1 Estimated cost for treating diabetes in Vanuatu, US$ million (*Continued*)

		2015	2020	2025	2030	2035	2040	2045	2050
C	Estimated adult population with diabetes: C=(A/100 × B)	28,134	35,334	43,647	53,508	64,704	77,450	91,343	106,355
D	Cost per person year in US dollars, adjusted to 2015 value and escalated at 5% inflation increase every 5 years from 2015	362	380	399	419	440	462	485	509
E	Estimated total annual national cost (in US$): E=[C × D]	10,184,599	13,430,377	17,419,696	22,423,212	28,470,508	35,783,082	44,311,825	54,174,020

Table A6.2 Estimated cost for treating diabetes in Solomon Islands, US$ million

		2015	2020	2025	2030	2035	2040	2045	2050
	SCENARIO 1								
	Decreasing diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	315,315	362,965	418,925	483,375	552,200	625,850	705,775	792,870
B	**Diabetes prevalence rate (%) – projected at 1.5% reduction every 5 years from 2015** (using the WHO estimated prevalence of 16.8% in the 2014 Global Status Report on NCDs as the starting value for 2015)	16.8	15.3	13.8	12.3	10.8	9.3	7.8	6.3
C	Estimated adult population with diabetes: **C=(A/100 × B)**	52,973	55,534	57,812	59,455	59,638	58,204	55,050	49,951
D	**Cost per person year in US dollars, adjusted to 2015 value** and escalated at 5% inflation increase every 5 years from 2015	198	208	218	229	241	253	265	279
E	Estimated total Annual national cost (in US$): **E=[C × D]**	10,488,638	11,545,445	12,619,994	13,627,694	14,352,995	14,708,382	14,607,028	13,916,590
	SCENARIO 2								
	No change in diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	315,315	362,965	418,925	483,375	552,200	625,850	705,775	792,870
B	**Diabetes Prevalence rate (%) – projected at no change from 2015** (using the WHO estimated prevalence of 16.8% in the 2014 Global Status Report on NCDs as the value for 2015)	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8

Table A6.2 Estimated cost for treating diabetes in Solomon Islands, US$ million (*Continued*)

		2015	2020	2025	2030	2035	2040	2045	2050
C	Estimated adult population with diabetes: **C=(A/100 × B)**	52,973	60,978	70,379	81,207	92,770	105,143	118,570	133,202
D	**Cost per person year in US dollars, adjusted to 2015 value** and escalated at 5% inflation increase every 5 years from 2015.	198	208	218	229	241	253	265	279
E	Estimated total Annual national cost (in US$): **E=[C × D]**	10,488,638	12,677,351	15,363,471	18,613,436	22,326,882	26,569,980	31,461,291	37,110,905
	SCENARIO 3 Increasing diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	315,315	362,965	418,925	483,375	552,200	625,850	705,775	792,870
B	**Diabetes prevalence rate (%) – projected at 1.5% increase every 5 years from 2015,** (using the WHO estimated prevalence of 16.8% in the 2014 Global Status Report on NCDs as the value for 2015)	16.8	18.3	19.8	21.3	22.8	24.3	25.8	27.3
C	Estimated adult population with diabetes: **C=(A/100 × B)**	52,973	66,423	82,947	102,959	125,902	152,082	182,090	216,454
D	**Cost per person year in US dollars, adjusted to 2015 value** and escalated at 5% inflation increase every 5 years from 2015.	198	208	218	229	241	253	265	279
E	**Estimated total annual national cost** (in US$): **E=[C × D]**	10,488,638	13,809,258	18,106,948	23,599,178	30,300,768	38,431,578	48,315,554	60,305,221

(*Continued*)

Table A6.3 Estimated cost for treating diabetes in Nauru, US$ million

		2015	2020	2025	2030	2035	2040	2045	2050
	SCENARIO 1								
	Decreasing diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	5,445	5,680	6,080	6,445	6,910	7,275	7,675	8,145
B	**Diabetes prevalence rate (%) – projected at 1.5% reduction every 5 years from 2015** (using the WHO estimated prevalence of 24.5% in the 2014 Global Status Report on NCDs as the starting value for 2015)	24.5	23	21.5	20	18.5	17	15.5	14
C	Estimated adult population with diabetes**: C=(A/100 × B)**	1,334	1,306	1,307	1,289	1,278	1,237	1,190	1,140
D	**Cost per person year in US dollars, adjusted to 2015 value** and escalated at 5% inflation increase every 5 years from 2015	525	551	579	608	638	670	704	739
E	Estimated total Annual national cost (in US$): **E=[C × D]**	700,363	720,153	756,624	783,394	815,767	828,682	836,961	842,371
	SCENARIO 2								
	No change in diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	5,445	5,680	6,080	6,445	6,910	7,275	7,675	8,145
B	**Diabetes prevalence rate (%) – projected at no change from 2015** (using the WHO estimated prevalence of 24.5% in the 2014 Global Status Report on NCDs as the value for 2015)	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5

Table A6.3 Estimated cost for treating diabetes in Nauru, US$ million (*Continued*)

		2015	2020	2025	2030	2035	2040	2045	2050
C	Estimated adult population with diabetes: **C=(A/100 × B)**	1,334	1,392	1,490	1,579	1,693	1,782	1,880	1,996
D	**Cost per person year in US dollars, adjusted to 2015 value** and escalated at 5% inflation increase every 5 years from 2015	525	551	579	608	638	670	704	739
E	Estimated total Annual national cost (in US$): **E=[C × D]**	700,363	767,120	862,199	959,657	1,080,340	1,194,276	1,322,938	1,474,150
	SCENARIO 3 Increasing diabetes prevalence								
A	Estimated total adult population (Age 20 years and over)	5,445	5,680	6,080	6,445	6,910	7,275	7,675	8,145
B	**Diabetes prevalence rate (%) – projected at 1.5% increase every 5 years from 2015** (using the WHO estimated prevalence of 24.5% in the 2014 Global Status Report on NCDs as the value for 2015)	24.5	26	27.5	29	30.5	32	33.5	35
C	Estimated adult population with diabetes: **C=(A/100 × B)**	1,334	1,477	1,672	1,869	2,108	2,328	2,571	2,851
D	**Cost per person year in US dollars, adjusted to 2015 value** and escalated at 5% inflation increase every 5 years from 2015	525	551	579	608	638	670	704	739
E	**Estimated total annual national cost** (in US$): **E=[C × D]**	700,363	814,086	967,775	1,135,921	1,344,914	1,559,871	1,808,916	2,105,928

(*Continued*)

The weaknesses in the methodology used for these calculations include:

- The 'cost per person year' data from the two studies used different methodologies, thus potentially affecting the baseline cost-data used for the calculations.
- The adult diabetes prevalence published in WHO, 2014b are not for 2015 and could therefore be lower or higher than the actual 2015 prevalence for the three countries.
- The estimated population between 20 and 24 years of age at 50 per cent of the 15–24 age group population assumes an equal 50 per cent split between those aged 15 to 19 years and 20 to 24 years.