

## Financing of NCD prevention in LMICs: Tonga Case Study

Ammar Rashid, Johanna Ralston, Kassim Nishtar, Saba Amjad

### Abstract

**Objective:** To estimate spending on NCD prevention in Tonga and identify the enablers, challenges and dynamics underpinning population-level NCD prevention spending, with particular focus on tobacco use, harmful use of alcohol, unhealthy diets and physical inactivity.

**Methods:** Primary and secondary data collection was used to examine processes and organisational contexts that shape the formulation of policy and financial frameworks for NCD prevention. The methodology was categorized into three tiers; an academic literature review, scrutiny and analysis of official policy documents and budgetary data on health and NCDs, and in-depth stakeholder interviews with key government officials leading NCD programmes. Government and government-routed donor spending on population level prevention was gauged to estimate NCD prevention spending. Where possible, impact of prevention programmes on disease incidence and risk factors was gauged through available outcome indicators.

**Results:** Tonga spent an estimated T\$ 3.23 million (US\$ 1.41 million) on NCD population prevention in 2018-19, constituting around 5.98% of total government health spending for the year. Donor spending constitutes a significant proportion of population-level NCD prevention spending. Enablers include increased tobacco taxes, inter-sectoral coordination, political leadership and use of the 'settings' approach. Challenges include rising levels of obesity, high costs of healthy diets and allocative and technical inefficiencies in fiscal and administrative systems.

**Conclusion:** Tonga has made considerable progress in focusing policy attention and resources on NCD prevention and risk factors, at nearly 6% of government health spending. Increased population-level NCD prevention spending can help address the growing NCD burden and create economic benefits.

"People used to eat papaya and tropical fruits, and walk to plantations but now they have western diet and go in a car even if it is 100 meters, children throw away the traditional diet and only have burgers" – Minister of Health, Tonga

**Keywords:** Child, Noncommunicable Diseases, Tobacco, Behaviour, Automobiles, Clergy, Diet, Healthy, Fruit, Employees, Incidence, Leadership, Risk Factors Obesity, Taxes

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### Introduction

This case study examines the financing of NCD prevention in Tonga and is part of a series of 10 case studies from LMIC describing the enablers, challenges and dynamics of financing non-communicable disease (NCD) prevention programmes, aimed at providing promising practices and determining common threads and trends. This case study also profiles areas in need of a further study to best advance domestic financing and adoption of country NCD programmes.

NCDs are a major health challenge in the Pacific. They are the leading cause of death in twelve Pacific Island countries for which data is available, including Tonga, accounting for over 70% of all deaths in these countries

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<sup>1,3,4</sup>Heartfile, Islamabad, Pakistan, <sup>2</sup>World Obesity Foundation, Cambridge, Massachusetts, USA

**Correspondence:** Ammar Rashid. Email: [Ammar@Heartfile.org](mailto:Ammar@Heartfile.org)

**ORCID ID:** 0009-0003-9287-2032

and territories. Mortality from NCDs in the Pacific Islands tends to be more than twice that of all other disease conditions combined, including communicable, maternal, peri-natal and nutritional conditions.<sup>1</sup> As Tonga's young population ages, this risk of mortality from NCDs is expected to increase. NCDs also impose considerable and increasing economic costs to governments like Tonga, which fund the vast bulk of health care in the country, limiting the fiscal space available to them to spend on other critical areas. Other aspects to the economic burden of NCDs include: affecting economic productivity by reducing labour participation due to ill-health; eliminating years of labour output of individuals who suffer premature mortality; and forcing individuals with NCDs to miss days of work or to work at a reduced capacity while at work.<sup>2</sup>

Tonga has made progress in developing a national NCD response, in terms of both the provision of health services and multi-sectoral actions designed to prevent NCDs and their associated risk factors. The government has taken

numerous policy and financing steps for this purpose. These have included tax measures to reduce consumption of tobacco, alcohol and unhealthy food; the establishment of dedicated institutions like the Tonga Health Promotion Foundation (Tonga Health) to finance NCD-related interventions, screening and health promotion services in schools, workplaces and churches; sports initiatives for physical activity; and inter-sectoral coordination mechanisms like the National NCD Committee and sub-committees for planning and monitoring action to prevent and control NCDs. The interventions have met with success in some areas but NCDs continue to pose a major public health challenge in the country. The risk of premature death from NCDs has stayed constant at around 25% for over a decade and a half.

Limited availability of funds for financing NCD control and prevention in particular are an important part of the reason for the continued persistence of chronic NCDs. There is an established tendency for governments to provide more funding for treatment than prevention, almost in inverse proportion to potential impact – that is, while prevention is clearly the best use of limited resources it is often easier to secure for treatment.

This study will investigate the dynamics of NCD prevention financing in Tonga to identify the key lessons, challenges and barriers from Tonga's experience with financing and implementing NCD prevention. It will do so by first examining the socio-economic and institutional context of NCDs in Tonga and the region, outlining the key policy responses and interventions of the Tongan government to the NCD crisis, and understanding how financing for NCD prevention is raised and spent, and what kind of economic, social, political and institutional barriers stand in its way. The key lessons and challenges emerging from the Tongan experience will then be discussed and summarised, and a set of actionable outcomes and recommendations will be presented.

## Methodology

The methodology for this assessment consisted of two parts: a review of academic and grey literature and budgetary data and data collection in the form of interviews with key informants. The study adopts the critical theory approach, which acknowledges reality as contextualized and shaped by various social, cultural, economic and political factors and sees the research process as a means to bring about change and transformation. In this study, the critical theory approach was employed to question existing frameworks, organizational hierarchies and red-tape, identify

impediments arising from political, economic, systemic and bureaucratic, and largely regional and global contexts, before proceeding to present a set of actionable outcomes and recommendations.

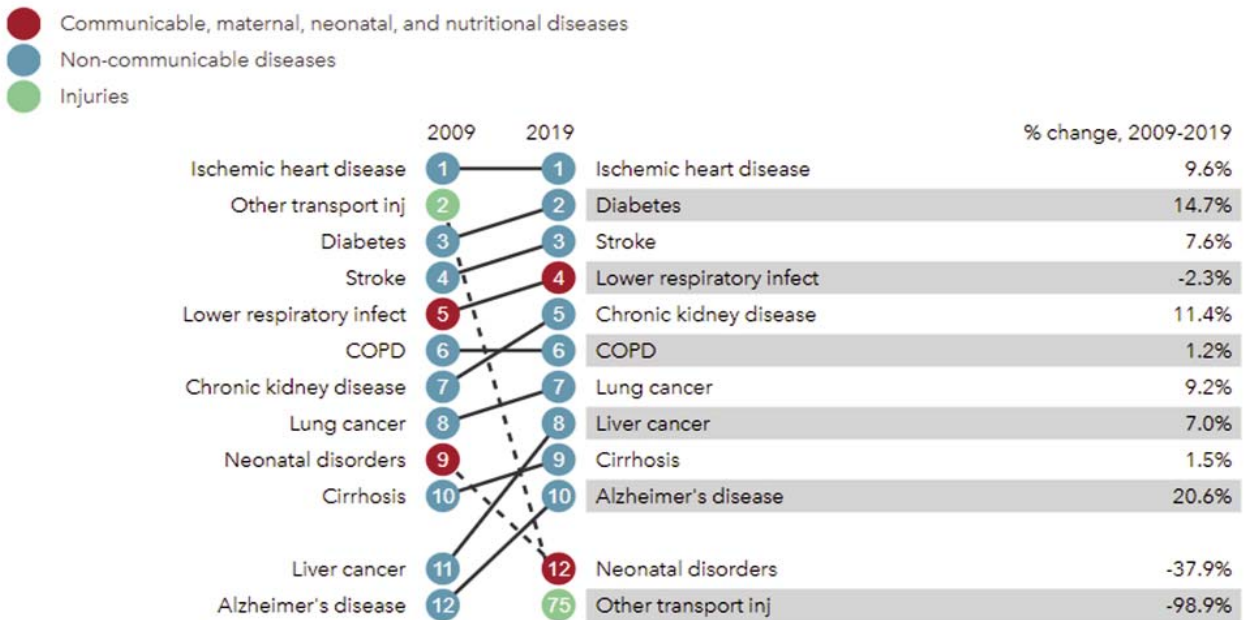
Public financing was defined as resources allocated/mobilized indigenously (revenues) at the country level. This also includes the use of catalytic official development assistance as grants/loans and/or monies from philanthropic sources predicated on the understanding that these are meant to build country capacity and are a stop gap arrangement. This implies that funds from ODA loans and grants, as well as from philanthropic sources, need to go first into the government's resources. The World Bank definition of prevention was employed, as those preventative and "public health services designed to enhance the health status of the population as distinct from the curative services which repair health dysfunction."<sup>3</sup>

The investigators used a search strategy involving Medline, Google Scholar, Embase, JStor and Web of Knowledge, databases to identify peer-reviewed articles that examined NCD financing. In addition, the first 20 pages of Google searches were examined to identify articles from the grey literature. The main search terms were 'NCD', 'prevention', 'financing' and 'Tonga'. Additional search terms related to the topic were: 'health promotion', 'non-communicable disease', and 'budget'. Additional search terms related to policy were: tax, legislation, ban, intervention, labelling, law, and standards. Based on the information in the abstracts, those studies were selected for review that: a) were of an empirical nature; b) examined NCD prevention, health promotion and its financing; and c) dated from the 21st century onward, when concerted policy efforts to counter NCDs began in the region.

The selected studies were reviewed and organised into categories of analysis that were refined based on the evidence emerging from the literature. Later, a specific search was undertaken for broader literature, including policy frameworks on NCDs in Tonga and the South Pacific.

The investigators then reached out to the governments and relevant departments/bodies to procure reports, budget plans, policy guidelines and similar material. This data was analysed thematically, to further refine research questions and thoroughly revise interview guides. At the end of the second tier, the investigators shortlisted potential participants to be recruited for in-depth interviews. These may include key stakeholders such as officials from the Ministry of Health, Ministry of Finance,

## What causes the most deaths?



**Figure-1:** Top 10 causes of death in 2019 and percent change in Tonga, 2009-2019<sup>11</sup>

planning ministry or staff from the office of the head of state. Often, interviews of individuals outside of government would be needed to get a balanced view with regard to constraints and challenges.

### The socio-economic context of NCDs in Tonga

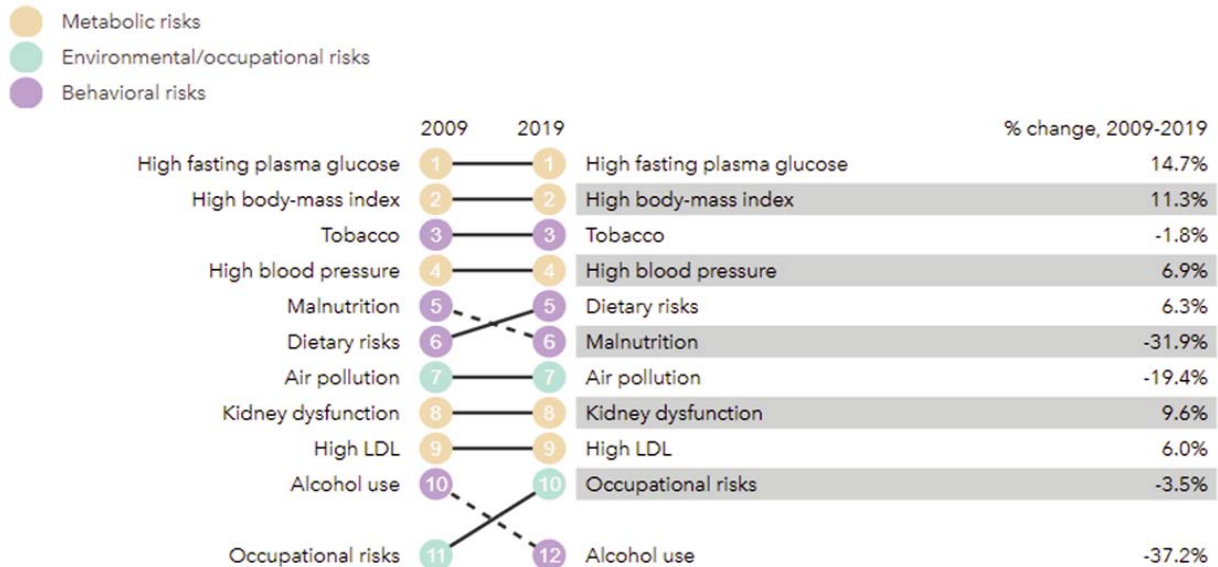
Tonga is a sovereign state comprising 169 islands scattered over the southern Pacific Ocean. It is a small, ethnically homogenous (98% Polynesian) nation with a population of 107,000, about one third that of Iceland (hence, it is important to remember that lessons learned in financing NCD prevention in its context may not be easily scalable or replicable in larger settings). Life expectancy in Tonga for men is 70 and 76 for women; while it has increased over the decades, it has started falling in recent years.<sup>4</sup> An increasing number of Tongans have moved into the capital and only urban centre, Nuku'alofa; however, village life and kinship ties remain influential throughout the country.<sup>5</sup> The national figures for the nutritional status of children indicate that 8.1%, 5.2% and 1.8% are stunted, wasted and underweight respectively.<sup>6</sup>

In general, the impact of the NCD epidemic on small island developing states (SIDS) including Tonga is catastrophic, across economic and social lines, with mortality and morbidity due to NCDs among the highest in the world, causing increasing strains on the public

health system that is difficult for the government to fully finance. According to the World Bank (2016), the NCD mortality burden is much greater in the Pacific Island countries than global standards; 'the estimated effect of four major types of NCDs (cardiovascular diseases, chronic respiratory diseases, diabetes, and cancer) on the global economy is approximately 3.25% of global GDP, whereas for SIDS in the Pacific, it is between 5% to 10%'.<sup>7</sup>

An examination of its history, geography and economy suggests that Tonga, like other countries in the region, cannot necessarily rely on sustained economic growth to expand fiscal space for health in a region vulnerable to a variety of external and internal shocks.<sup>8</sup> Pacific Island countries face a number of distinct geographical, political and economic circumstances that inhibit rapid economic growth. These constraints include: 'small population size (preventing economies of scale in the private sector as well as in government service delivery); distance from markets; high-cost structures; political instability and/or volatile political coalitions that inhibit economic reform; unsustainable rent seeking from natural resources, and land ownership; and contract enforcement practices that inhibit private investment'.<sup>8</sup> Even with the assumption of a stable and sustainable path of economic growth in the future, political will and administrative capacity would be necessary to raise the requisite revenue from taxes in otherwise highly informal economies.

## What risk factors drive the most death and disability combined?



**Figure-2:** Top 10 risk factors contributing to DALYs in Tonga in 2019 & percentage change (2009-2019)<sup>11</sup>

### The NCD Challenge in Tonga

A focus on population-level risk factor prevention is supremely relevant in Tonga where a startling '99.9% of Tongan adults aged 25-64' are at moderate to high risk of developing a non-communicable disease.<sup>3</sup> Around 80% of deaths in Tonga are due to NCDs, and many of these deaths are premature, i.e., they occur among people less than 60 years age. In 2019, NCDs were the leading cause of morbidity; they accounted for 'four of the five leading causes of mortality, 10% of hospital admissions and 20% of government spending in the health sector'.<sup>10,11</sup>

NCDs inflict considerable economic cost to Tonga. They inhibit the economic productivity of both the population affected by NCDs as well as those members of the workforce who need to spend time and energy caring for them. It causes losses to the income, savings, wealth and investment of individuals while also diverting government spending away from key public goods and priority areas.<sup>12</sup> According to the World Bank, NCDs currently cost the country 8.3% of GDP, an economic burden which is expected to rise to 12.3% in 2040. By 2040, percentage of Lost Effective Labour Force due to NCDs (in particular cardiovascular disease, diabetes, chronic respiratory disease, and cancer) in Tonga will be 18.5%.<sup>7</sup>

### The epidemiological burden of NCDs in Tonga

It is estimated that 70-77% of deaths in Tonga can be attributed to neoplasms, diabetes, and cardiovascular

disease.<sup>13</sup> Although data on causes of death in the country is difficult to ascertain with accuracy, cardiovascular disease (CVD) is considered to be the major cause of death in Tonga.<sup>8</sup> Cardiovascular disease risk of 30% or higher, higher percentages of men were at risk than women, with CVD risk of 16.6% and 7%, respectively.<sup>14</sup> As elsewhere, CVD risk increases with age, with a significant increase from 0.8% among the 40-54 age group to 11.3% in the 55-69 age group.<sup>15</sup> In Tonga the past four decades have seen an increase in Type 2 Diabetes (T2DM) prevalence from '5.2% in 1973 to 19% of the population in 2012 which was projected to rise to 22.3% by 2020'.<sup>16</sup> Estimates show that 34.4% of the population between 25-64 years has diabetes (defined as having fasting capillary whole blood value  $\geq 6.1$  mmol/L or  $\geq 110$ mg/dl or currently on medication for diabetes), including 29.7% of men and 38.6% of women. The country is now ranked among the top ten in the world in terms of diabetes prevalence. Cancer is responsible for about 9% of deaths in Tonga and the age standardized cancer incidence in Tonga (2000-2005) were '195 and 151 per 100,000 person years for females and males respectively'.<sup>13</sup> Chronic respiratory disease is also widely prevalent and responsible for 7% of deaths in Tonga. As a result of this growing NCD disease burden, life expectancy in Tonga has started to decrease, from 69 to 65 in men and from 72 to 69 in women.<sup>16</sup>

### NCD risk factors in Tonga

NCDs in Tonga are driven by a host of behavioural, metabolic and environmental risk factors. The major metabolic risks relate to body mass index (overweight/obesity), high fasting plasma glucose and high blood pressure (hypertension) while the key behavioural risks for NCDs include tobacco use, high LDL and dietary risks. (See Figure 2).

### Obesity

High BMI is the leading risk factor for NCDs and the obesity rate has increased since 1973 from 56% to nearly 70%. In 2012, Tonga was ranked the third most overweight country in the world, with steady increases in average weight replacing tobacco as the leading risk factor. According to the 2017 STEPS risk factor survey, 93% of the Tongan population was classified as overweight, including 90% of men and 95% of women, while 77% was classified as obese (BMI  $\geq 30$ kg/m<sup>2</sup>), up from 67% in 2012. Over 66% men and 82% women were considered obese according to the survey.<sup>15</sup>

### Hypertension

Hypertension is also widely prevalent, with 27.6% of the adult population (25-64 years) suffering from hypertension (defined as having SBP $\geq 140$  mmHg and/or DBP $\geq 90$  mmHg or on medication for raised blood pressure) in 2017, up from 27.6% of the adult population in 2012. This includes 35% of men and 37% of women (up from 28% of men and 27% of women in 2012).<sup>15</sup>

### Tobacco use

Tobacco use remains a major behavioural risk factor, with 24.5% of the population currently smoking a tobacco product according to the 2017 STEPS survey and 22% being daily smokers, including 38% men and 15% women.<sup>15</sup> This represents a slight reduction from the 2012 STEPS survey. Tobacco use seems to be more prevalent in the younger generation; according to the Global Youth Tobacco Survey (2010) cigarette smoking prevalence for students aged 13-15 was 37.5% for boys, and 18.9% for girls.<sup>14</sup>

### Unhealthy diets

Increasingly unhealthy diets are partly to blame for NCDs, as 97% of the adult population consumes less than five combined servings of fruits and/or vegetables a day,

deteriorating from 73% in 2012.<sup>15</sup> Furthermore, over 51% of people reported always adding salt or salty sauce to their food before eating and 23% of people report always or often eat processed foods high in salt.<sup>15</sup> In Tonga, as in other parts of the world, changes in dietary patterns linked to the increased consumption of cheap processed foods high in calories have been closely associated with the rise in diet-related NCDs. Over the last 40 years, imports of foods with low nutritional value (often with high fat content) have increased at the expense of healthier traditional diets.

### Physical inactivity

Physical inactivity is also a significant concern, with 39.8% of the population having low level of total physical activity (<150 minutes of moderate intensive activity per week), including 30% of men and 45% of women, which represents a deterioration from the 2012 STEPS survey. It is estimated that 78% of the population does not engage in vigorous physical activity, including over 85% of women.<sup>15</sup>

### Combined risk factors

For combined risk factors (current daily smokers, overweight/obese, consumed less than five servings of fruit/vegetables, low total physical activity, raised blood pressure), the 2017 STEPS survey found that 67.9% of those aged 18-69 years, 74.8% of those aged 45-69 years, and 67.6% of those aged 30-44 years had 3 or more of the above risk factors (considered as being at High Risk for NCDs).<sup>15</sup> Indoor air pollution from Solid Fuel Use (SFU) also continues to be a problem with 56% of households using SFU.

### Health financing in Tonga

Any discussion of health financing in Tonga should be prefaced by the fact that lessons learnt here may not be replicable in other countries because of the country's small population. Tonga has a large public health system with free curative services. Health expenditure is relatively high in Tonga, like other neighbouring countries in the region. On average government health expenditure has taken up between 11% to 15% of total government budgets in the last five years. Government expenditure on health accounts for over 84% of total health expenditure, much higher than the 36% average for lower to middle-

**Table-1:** Tonga Health and Total budget 2014-15 to 2018-19 (T \$)

	2014-15	2015-16	2016-17	2017-18	2018-19
Total Health Budget	34,373,616	37,519,500	47,322,893	52,119,400	54,879,900
Total Budget	302,717,658	329,709,700	327,886,600	382,449,100	476,766,600
Health as % of Total Budget	11%	11%	15%	15%	12%

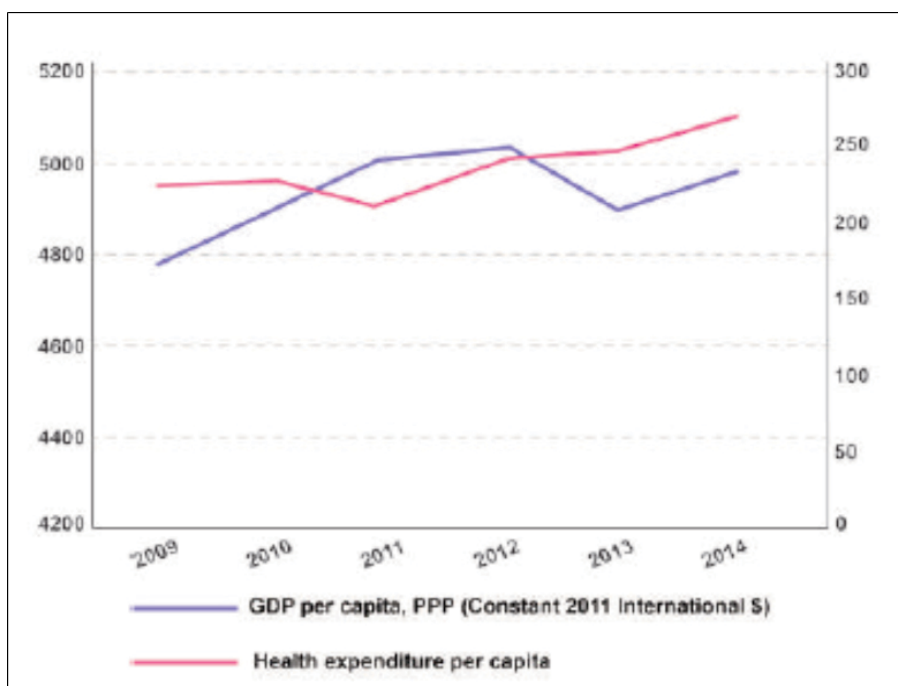


Figure-3 GDP per capita and health expenditure per capita in Tonga 2009-2014<sup>7</sup>

income (LMIC) countries globally. Health expenditure per capita in Tonga amounts to USD \$219 per annum, much higher than the average of USD \$79 for LMICs globally, whereas it amounts to USD \$245 in terms of purchasing power parity, higher than the LMIC average of 160.<sup>8</sup>

The widespread use of free, publicly-funded health services implies a high level of financial protection against out-of-pocket, 'catastrophic' health expenditure that otherwise impoverishes individuals or households, which is an advantage. However, according to research by Anderson et al (2014), the rise in NCD prevalence is 'putting significant and unsustainable pressure on health budgets, especially in the face of ongoing demographic and epidemiological trends and impediments to growth'.<sup>8</sup> Thus health expenditure per capita in Tonga has

Table-2: Tonga STEPS survey results from 2004 to 2017<sup>14</sup>

NCD indicators for 25-64 years	STEPS Survey 2004 results (%)	STEPS Survey 2012 results (%)	STEPS Survey 2017 results (%)
Low physical activity (<600 MET minutes per week)	43.9	23.7	39.8
Fruit and vegetable consumption (less than 5 servings per day)	92.2	73.1	97.3
Alcohol consumption (in past 12 months)	8.9	5.7	5.7
Smoke any tobacco product (such as cigarettes, cigars or rolled tobacco)	29.8	29.3	24.5
Overweight	92.1	90.7	93.2
Obese	68.7	67.6	77.1

continued to rise in recent years (Figure 3), with treatment for NCD conditions one of the main drivers. This puts the health system under considerable financial pressure.

#### NCD prevention efforts in Tonga

Tonga's response to NCDs developed in the context of coordinated regional efforts of recognizing and combatting the challenge of NCDs. A number of factors in the national and regional policy context helped establish an enabling environment for the development of this strategy, including regional initiatives, including: 'periodic meetings of Ministers of Health for Pacific Island Countries, the 'Healthy Islands' concept which recognized the importance of NCDs, consultations on food quality and safety in the Pacific, and the development of the WHO Framework Convention on

Tobacco Control, which provided the impetus for tobacco control in Tonga (see below).<sup>17</sup> In this context, Tonga became the first Pacific country to develop a National Strategy to Prevent and Control NCDs from 2004 to 2009. This was followed by National Strategy (2010–2015) – Hala Fononga – which was launched in 2010.<sup>18</sup>

An evaluation of Tonga's first NCD strategy found it to have had some impact on NCD risk factors. The Kingdom of Tonga STEPS Report 2012 found evidence of 'a positive trend in NCD risk factors including tobacco use, alcohol consumption, fruit and vegetables consumption, physical activity, overweight and obesity, from 2004 to 2012'.<sup>18</sup> However, the results of the 2017 STEPS survey were concerning – despite continued progress in tobacco

reduction, many of the gains appeared to have been reversed, with the data showing increases in the prevalence of low physical activity, overweight, obesity, and unhealthy diets (see Table 2).

Tonga is in the process of completing a National NCD Strategy for 2015-2020 with a greater focus on NCD risk factors, implemented by MOH, Tonga Health Foundation (Tonga Health) and National NCD Committee with support from the Australian government, with the goals of: '1) enabling infants to have a healthier start to life; 2) healthier lifestyles for Tongans (with a focus on children and adolescents); 3) improved early detection, treatment and sustained management of people with or at high risk of NCDs; and 4) strengthened monitoring and surveillance supports evidence based action.'<sup>19</sup>

### Regional NCD control and prevention efforts

Regional efforts have been key to Tonga's efforts to address NCDs. The country was part of the Pacific Islands Forum Leaders that invested political capital in NCD control and prevention by explicitly declaring the "Pacific is in an NCD Crisis" as part of the 42nd Pacific Islands Forum communiqué of September 2011.<sup>1</sup>

The Health, Finance and Economic, and Trade Ministers from the Pacific (2013 and 2014) similarly reaffirmed the significance of the NCD crisis and the importance of urgently addressing it through scaling up financial commitments toward Health Systems.<sup>20</sup> Tonga, along with other Pacific Island governments, signed up to the WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020 including its main goal of 'achieving a relative reduction of 25 per cent in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases by 2025'.<sup>21</sup>

Another important regional development that has been key to the development of Tonga's NCD response is the Pacific NCD Roadmap approved by the Joint Forum Economic and Pacific Health Ministers' Meeting in July 2014, which outlined the economic costs of NCDs and outlined strategic priorities for Pacific leaders, including tobacco control, reducing unhealthy food consumption, and improving prevention and early treatment.

### NCD prevention and health promotion by the Ministry of Health

The Health Promotion Unit (HPU) of the Ministry of Health is a key actor in Tonga's NCD prevention efforts along with the Health Promotion Foundation (TongaHealth). The health promotion interventions designed as part of the NCD Strategy implementation by the Ministry of Health (MOH) focus on four distinct programme

interventions: 'healthy setting; healthy eating; tobacco control; and reduction of alcohol abuse.'<sup>22</sup> These messages are carried forward by health-promoting schools, churches and work through various activities.

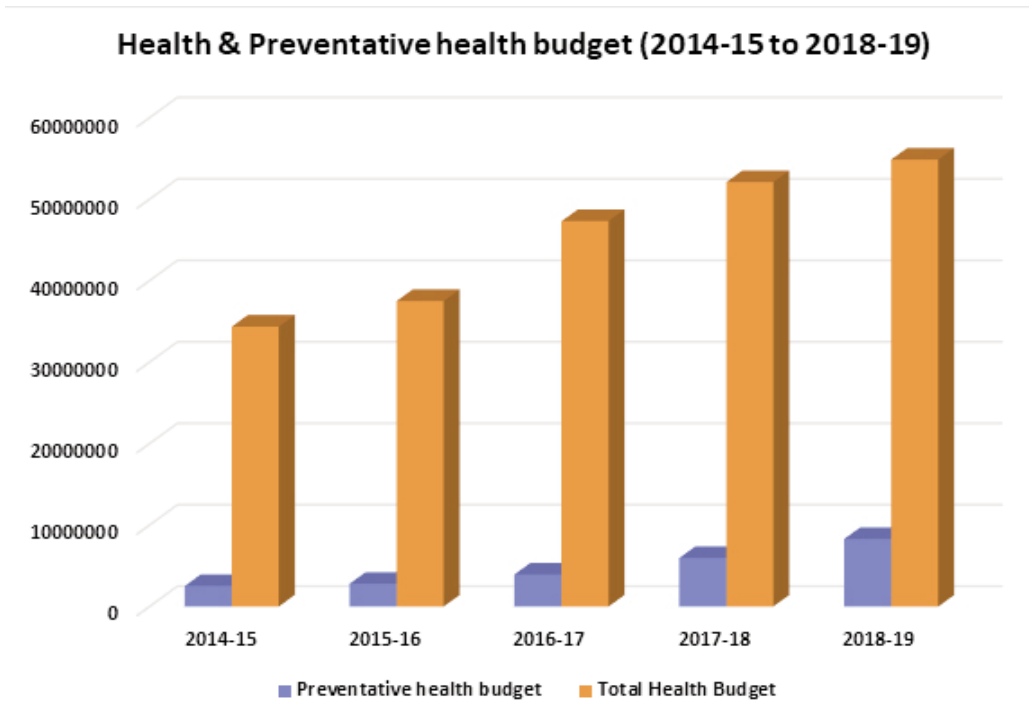
To support the implementation of priorities in the NCD strategy, HPU-MOH conducts sports competitions, workplace health check-ups, workplace physical activities, trainings on health literacy, public awareness campaigns, community campaigns, ad agencies, observing global days, e.g., World Diabetes Day, academic meetings, health promotion billboards and radio programmes. The HPU-MOH has also collaborated with the Ministry of Internal Affairs, and Ministry of Education to support physical activity initiatives, including the 'Kau Mai Tonga' (Come on Tonga) programme and the 'Come and Try' programme.

It has also supported, in collaboration with the Ministry of Tourism, an extension of the walkway (sidewalks) along the waterfront in the Capital Nukualofa which sees over 50 cruise ships every year. This is being supported by the Chinese government with a USD \$13 million grant and is reported in evaluations to have 'drawn many more walkers, highlighting the importance of enabling physical environments to support greater participation in physical activity'.<sup>18</sup> According to the Minister of Health, they now plan to "further physical activity promotion by building a netball ground in every village." The HPU-MOH has also collaborated with the Ministry of Education to support literacy initiatives like the 'Pacific Health and Science Literacy' programme with the Liggins Institute NZ, to integrate health promotion messages and skills within this programme.<sup>18</sup>

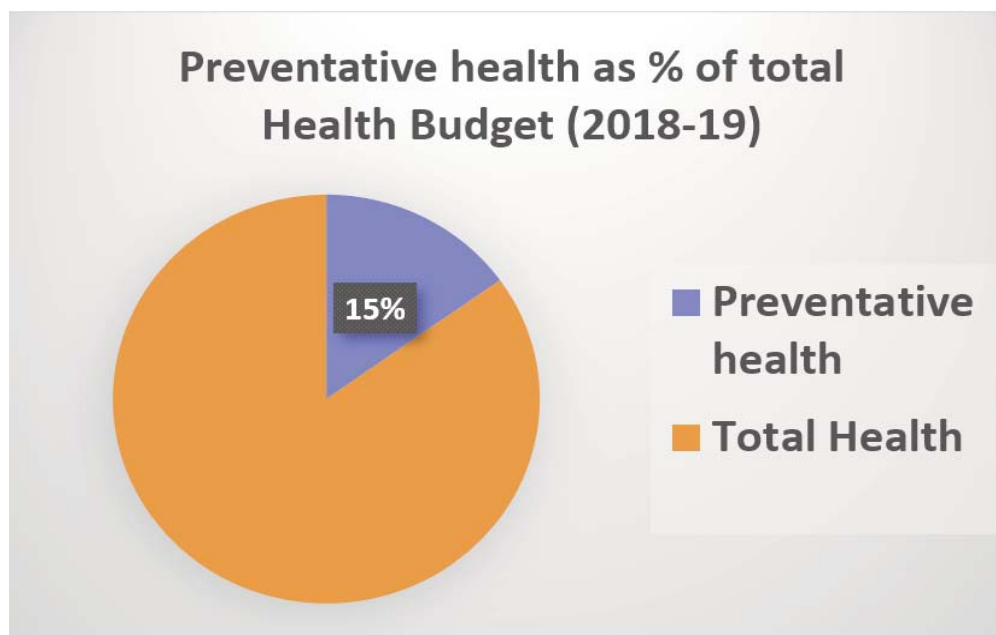
The majority of health financing for NCD prevention in Tonga comes from government, complemented by some development funding. Total expenditure on health as a percentage of GDP is 5.2 percent or USD 270 per capita, relatively high for LMIC countries. The MOH dedicates a proportion of its health budget to 'preventative health care', which includes preventative health services, environmental health care and community health services.

The amount dedicated to preventative health care is still limited and has tended to hover around 7% to 8% of the total health budget in the past. However, this was increased significantly in 2018-19 and now constitutes about 15% of the health budget. As percentage of GDP, preventative health spending still constitutes less than 1% in 2018-19.

Tonga has now tasked the National NCD Committee (NNDC) with oversight of the NCD Strategy. The NNDC is



**Figure-4:** Tonga Health and Preventative Health budget 2014-15 to 2018-19



**Figure-5:** Preventative health as proportion of health budget.

a 'multi-disciplinary body comprising chief executives from key government ministries as well as church and civil society representatives'.<sup>22</sup> On the other hand, the task of monitoring the implementation of the NCD Strategy has been assigned to Tonga Health, an autonomous

for inbound travellers was reduced from 500 cigarettes to 250 cigarettes'.<sup>23</sup>

In July 2016, the government increased taxes on imported cigarettes by nearly 50% to T\$380/1000 sticks.<sup>23</sup> In both

foundation appointed by the Minister of Health.

### **Tobacco control measures**

Tobacco control has been a cornerstone of Tonga's NCD control and prevention efforts since the 1990s. In 1999, Tonga's Minister for Health, Lord Viliami Tangi, attended the first major consultation for the development of the FCTC, which provided impetus for tobacco control in Tonga; within one year, in September 2001, a comprehensive Tobacco Control Act was drafted and passed.<sup>17</sup>

In recent years, in response to rising NCD rates, the Tongan government has gradually increased taxation measures aimed at reducing the consumption of tobacco. In mid-2013, the following tax measures were introduced: 'the excise tax on cigarettes was increased from T\$210 (US \$91) per 1000 cigarettes or per kilogram to T\$250 (US \$109) for imported cigarettes and T\$200 (US \$87) to T\$238 (US \$104) for locally manufactured tobacco/cigarettes; and the tobacco concession



Figure-6: Cigarette sales in Tonga (2011-17): volume and growth<sup>24</sup>

2013 and 2016, cigarette sales fell as a result of the tax increases (Figure 6). However, a 2019 World Bank evaluation found that while cigarette consumption had gone down, most smokers had just shifted to Tapaka Tonga, a local substitute.<sup>12</sup>

#### Tonga Health Promotion Foundation (Tonga Health)

A key element of Tonga's NCD prevention efforts has been the establishment of the Tonga Health Promotion Foundation or 'Tonga Health'. Modelled on the Victorian Health Promotion Foundation, Tonga Health was established in 2007 to 'provide grants to fund health promotion activities, and work with the Health Ministry and other stakeholders to keep NCDs high on the policy agenda'.<sup>17</sup> The Foundation acts as a link between the government, communities and civil society, focusing on the priority areas of healthy eating, physical activity, tobacco control and reducing alcohol misuse.

Tonga Health is composed of 'two representatives from the field of health and illness prevention, one with

expertise in business, management or law, one representing the interests of the churches or community groups, and one member of the Legislative Assembly'.<sup>22</sup>

Some of Tonga Health's main functions include 'the provision of grants and sponsorships for Health Promotion, including to community groups, NGOs and government stakeholders for activities like health education and promotion around tobacco use and exercise; the development of vegetable gardens in schools and communities; and research around the use of salt and tobacco'.<sup>17</sup> Since 2015, Tonga Health also serves as the secretariat for the implementation of the National Strategy for the Control of Non-Communicable Diseases and has signed a Memorandum of Understanding with the National NCD Committee (NNCDC) for this purpose.<sup>22</sup>

Tonga Health is funded by a combination of government budgets under Health Ministry allocations and through donor grants (See Table 3), such as those from the AusAID agency and the Australian Department of Foreign Affairs

Table-3: Sources of Tonga Health funding (T\$)

Source	2016-17	2017-18	2018-19
Government budget	706,063	600,000	600,000
Donor funding	559,800	871,200	215,500
Total	1,265,863	1,471,200	815,500

**Table-4:** Food taxes passed in Tonga in 2013<sup>24</sup>

Food Item	Old Rate	New Rate
Fresh Fish	20% duty	5% duty
Vegetable Oil	20% duty	10% duty
Tin Fish	20% duty	5% duty
Lard/Dripping	15% duty	T\$1/ per kg excise
Carbonated Drinks	15% duty	T\$1/ per litre excise

and Trade (DFAT).

### Fiscal measures for healthy diets

In August 2013, the Tongan government passed certain food taxes specifically as a measure to address unhealthy diets for the first time.<sup>24</sup> These taxes were a result of a taskforce with representatives of various ministries formed to address unhealthy diets at the directive of the

**Table-5:** Food Taxes passed in Tonga in 2016<sup>24</sup>

Food Item	Old Rate	New Rate
Turkey Tails	-	\$1.50 per kg excise duty
Chicken Leg Quarters	-	40 seniti per kg excise duty
Mutton flaps, lamb breasts and lamb flaps	-	15% customs duty
Mayonnaise	-	15% customs duty \$2.00 per kg excise duty
Lard/Dripping	\$1 per kg	\$2.00 per kg

Minister of Revenue. This initiative resulted in five food items being taxed or having taxes removed, namely, fresh fish, tin fish, vegetable oil, carbonated drinks, and lard/dripping (see Table 4).<sup>24</sup>

This was followed by further taxes on food in 2016 at the initiative of the Ministry of Revenue in consultation with the Health Ministry. This was also accompanied by the removal of duties on 'healthier' food products (Table 5).

An evaluation of the food tax and fiscal measures by the Food and Agriculture Organization (FAO) found that mutton flaps and turkey tails consumption decreased as a result of the tax, while other fatty meat and chicken sales were not affected. The evaluation suggested that 'incentives needed to be put in place for the production of local substitutes and alternative food products'.<sup>24</sup> Data on consumption was also lacking, making it difficult to fully assess the success of these measures.

### Alcohol harm reduction

Tonga has gradually increased taxes and duties on both local and imported alcohol. In 2015, the government introduced measures to increase excise taxes for locally manufactured beers to T\$15 per litre of alcohol, import duty for imported beer to 15%, excise taxes for locally manufactured spirits to T\$50 per litre of alcohol and an

additional import duty rate of 15% on imported spirits.<sup>18</sup> According to the Ministry of Health, lack of funding for data collection and research for campaigns has limited other activities to reduce alcohol harms. Billboards, funded by Tonga Health, have been erected to 'raise public awareness of the dangers of drunk driving', messages that are being 'reinforced by Breathalyzer testing'.<sup>18</sup> According to a 2019 evaluation, the overall consumption of beers and spirits has fallen, though largely among occasional drinkers, with daily drinkers not changing their consumption patterns.<sup>12</sup>

### Sugar Sweetened Beverage (SSB) consumption:

Tonga has also taken multiple steps to discourage consumption of sugar sweetened beverages (SSBs). The government introduced an excise tax of T\$0.5 per litre on sugar-sweetened beverages (SSB) while abolishing customs duty in 2013–14.<sup>12</sup> In 2016-17, the excise tax on

SSB was increased to T\$1 and a new tax formula based on sugar content was introduced the following year. This resulted in an increase in total tax from T\$0.37 per litre in FY2012–3 to T\$1.85 per litre in 2017–18 and an increase in the retail price of an SSB like Coca Cola from T\$2 per can in 2015-16 to T\$2.5 per can in 2017-18.<sup>12</sup> According to a World Bank evaluation, the tax increases were highly successful; the increase in prices led to 38% of the population reducing their consumption of SSB.<sup>12</sup> It is worth noting here, however, that over one third of the Tongan population do not consume SSB, hence it is a less significant risk factor than tobacco and alcohol.

### Advisory committees for inter-sectoral coordination

There was an early recognition in Tonga that addressing NCDs required support from sectors in government and society, and the government sought to ensure multi-stakeholder engagement through the constitution of NCD committees. These committees took the form of one national committee, along with four sub-committees focusing on alcohol misuse, tobacco control, physical activity and healthy eating.<sup>17</sup> Members of the committees ranged from the Ministry of Health to the Ministry of Education, Ministry of Youth and Sports to the Ministry of Finance, as well as organizations like the Tongan Red Cross and Tonga Family Health Association, and donors

**Table-6:** Total NCD prevention financing 2018-19<sup>1</sup>

Area	Estimates (T\$)	Estimates (USD \$)
Community health budget MOH	976,100	426,263
Tonga Health Foundation budget	600,000	262,980
Tonga Health donor funding (cash/budget)	215,500	94,454
Tonga Health donor funding (in kind)	560,000	245,448
THSSP II support to MOH Health Promotion	881,000	384,732
Total	3,232,600	1,413,888

like AusAID, among many other stakeholders.

### Tackling NCDs through sport

One of the most significant NCD programmes in Tonga has been the AusAID 'Kau Mai Tonga' programme to address physical inactivity through sport. The programme is part of the Australian government's Sport Outreach Programme and is run through the Ministries of Health and Sport as well as the Tongan Netball Association. The programme focuses on women in particular, who tend to have higher obesity rates and face exclusion from sports due to cultural and socioeconomic factors, and included a social marketing campaign to influence women's attitudes towards exercise and sports.

Kau Mai Tonga was integrated into the country's NCD Strategic Plan and helped to generate demand for sports, with over 300 teams registering for the first Kau Mai tournament.<sup>17</sup> The programme serves as an example of an effective multi-sectoral intervention that addresses a crucial NCD risk factor and contributes to the country's overall NCD prevention goals by promoting healthier lifestyles.

### Tonga Health Sector Support Programme (THSSP) by Australian DFAT

The major external donor initiative supporting Tonga's fight against NCD's is the Australian Department of Foreign Affairs and Trade's (DFAT's) Tonga Health Sector Support Programme Phase II (THSSP2), which provided the Tongan government with development assistance of approximately AUD \$10.75 million for NCD prevention and control (in addition to T\$2.1 million for the Tonga Health Foundation) from 2015 to 2020.

THSSP2 has four components: 'i) Management of NCDs in primary care: primary and secondary prevention; ii) Health promotion related to NCDs; iii) Health systems strengthening; and iv) Support for mental health and disability services.'<sup>18</sup> Together these components support the goal of the Ministry of Health's plan to achieve Universal Health Coverage (UHC) in Tonga. The programme aims to ensure that that primary health care facilities provide screening (to identify the presence of

NCDs or their risk factors), preventive activities (such as practical support to stop smoking) and sound management of existing NCDs to prevent them from escalating into much more serious conditions (such as diabetes-related blindness and amputations).<sup>25</sup>

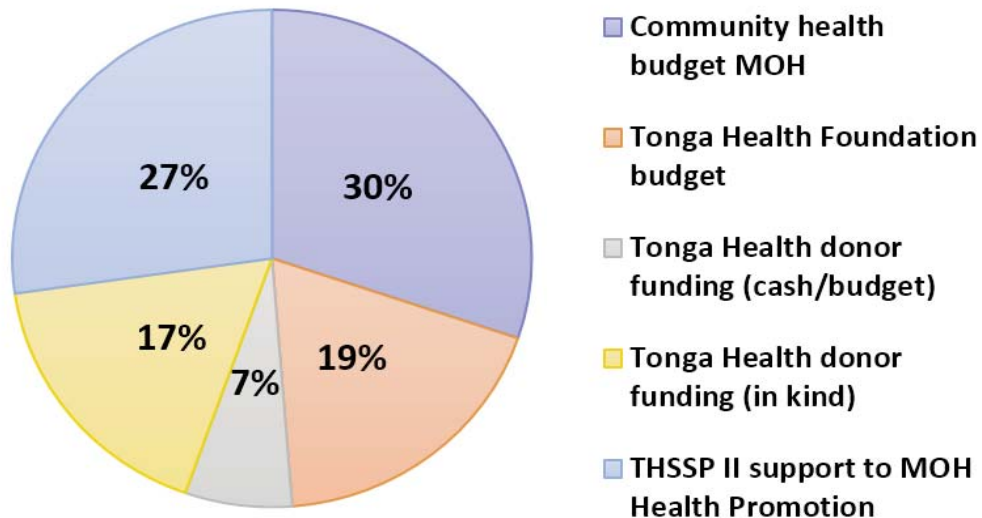
The programme also includes nationally organised health promotion activities to complement services provided in primary care facilities. Examples are media campaigns and programmes which promote healthier lifestyles in other ways (e.g. improving diet through using fresher, local foods). For NCDs, health promotion focuses on the four major risk factors of poor diet, insufficient exercise, smoking and alcohol misuse. The programme also supports health systems strengthening to improve the quality and sustainability of the NCD response in Tonga, and create well-functioning systems of planning, resource allocation, asset management and procurement.

The THSSP design documents state that 'the responsibility for achieving the THSSP2 targets is shared amongst the Ministry of Health, Tonga Health, DFAT and (to a lesser extent) many other stakeholders in Tonga'.<sup>25</sup> THSSP2 works through the Ministry of Health's systems, relies on activities delivered by MOH staff and is organized around the annual work-plans of the MOH and Tonga Health. However, despite the THSSP2's stated intention of focusing on NCD prevention and control, a Mid-term evaluation of the programme published in 2019 noted that the bulk of the project's allocations were still focused on health services rather than prevention.<sup>19</sup>

### Total annual spending on NCD prevention in Tonga

Based on estimates of spending on the aforementioned areas of intervention, Tonga spent an estimated T\$ 3.23 million (US\$ 1.41 million) on population level NCD prevention financing in 2018-19.<sup>26</sup> The single largest proportion of NCD prevention spending constitutes allocations for community health by the Ministry of Health (T\$ 976,100), followed by donor contributions for Health Promotion by the Ministry of Health (T\$ 881,000), donor contributions (in-kind and cash) for Tonga Health Foundation (T\$ 775,500) and the government budget for

## Breakdown of NCD prevention spending in Tonga (2018-19)



**Figure-7:** Breakdown of NCD prevention spending in Tonga (2018-19) <sup>19-26</sup>

Tonga Health Foundation (T\$ 600,000). Donor contributions (particularly the Australian government's Tonga Health Sector Support Programme) make up the majority (51%) of Tonga's spending on NCD prevention and health promotion, suggesting high levels of donor dependence in population level prevention spending.<sup>19</sup> In total, population-level NCD prevention amount represents approximately 5.98% of the total Ministry of Health budget of T\$54 million in 2018-19. This amounts to roughly 0.75% of Tonga's GDP (of USD \$426 million) being spent on NCD prevention and health promotion.

### Discussion

Tonga's experience demonstrates the importance of a collaborative and integrated all-of-government response to tackle NCDs, which illustrates the role of both tax measures to reduce tobacco and alcohol as well as institutional coordination mechanisms for initiatives to induce healthier lifestyles and diets. However, multiple challenges remain, including low population-level prevention spending by the government (with donor spending constituting the majority of population-level NCD prevention) and continued difficulties with tackling obesity and other nutrition-related risk factors. The following sections summarize some key themes that illustrate the key lessons and challenges from Tonga's experience that are instructive for the debate around

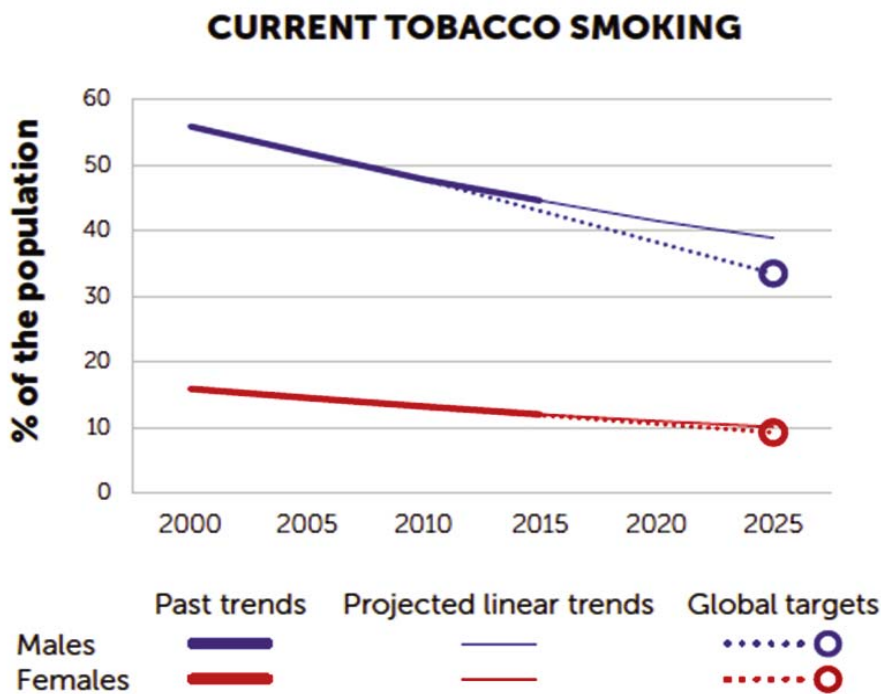
effective and well-financed prevention efforts.

### Adjusting financing priorities

Health has long been a budgetary priority for Tonga and the country is a regional pioneer in NCD policies. However, despite an increased policy focus on NCD prevention since 2015, population-level prevention programmes still constitute less than 6% of Tonga's health budget, with the vast majority of health spending going into curative care. The rising NCD-related curative burden amid economic difficulties suggests this high level of curative spending will be an unsustainable drain on the Tongan economy. Tonga Population-level prevention programmes have also been heavily reliant on donor support in recent years, with both the Tonga Health Foundation and the Ministry of Health's health promotion activities heavily support by the THSSP-II. This points towards the need for both sustainable local revenue mobilisation for health promotion and a shift in allocative priorities towards population-level NCD spending.

### The success and challenges of the tobacco tax

Tonga has achieved relative success with its tobacco taxation measures, which have brought down consumption of a major NCD risk factor. The periodic tax hikes, particularly in 2016, have managed to reduce the volume of cigarette sales in Tonga to a considerable



**Figure-8:** Tobacco smoking in Tonga over time<sup>27</sup>

extent. This has resulted in a gradual reduction in tobacco smoking, particularly for men, as shown in Figure 8.

However, there are indications that the effects of the taxes may have been limited somewhat by smokers simply shifting toward local substitutes. The tax hike has proven effective enough to change the market share of major cigarette brands in the country, with 'a significant number of smokers having replaced more expensive imported cigarettes with cheaper, locally-manufactured cigarettes'.<sup>23</sup> Tax increases on cigarette imports have enabled local brands like Palataisi to overtake imported brands like Pall Mall as the predominantly-used brands in Tonga.

According to a study conducted by the World Bank, Australia DFAT, New Zealand MFAT, WHO, and Tonga Health Promotion Foundation, while 18% of smokers reduced their consumption, over 20% of smokers have shifted from consuming manufactured cigarettes to hand-rolled tobacco leaves called Tapaka Tonga, which is not subject to excise tax.<sup>28</sup> This is because Tapaka Tonga costs less than half the price of a cigarette pack, is widely available across the country, and often labelled as organic (without any appropriate warnings), leading to a misconception among the population that it is less or not harmful to health.<sup>23</sup> The increased use of Tapaka Tonga is a cause for concern and stands to offset any health impacts resulting from the increased tobacco taxes. In

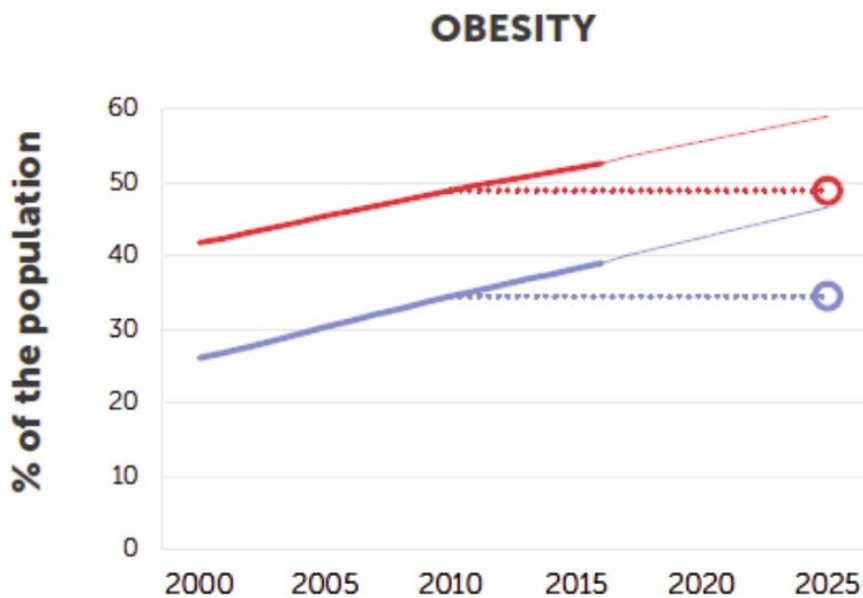
2019, Tonga responded to this challenge by imposing a T\$ 200 excise tax per kg on locally manufactured Tapaka Tonga products.<sup>29</sup> There is a need for updating health education campaigns to focus on the harms of all tobacco products including Tapaka Tonga, as well as enforcement of smokefree policies in workplaces and public settings.

### **Complementarity and inter-sectoral governance**

There is increasing evidence from around the world that affirms the importance of multi-sectoral action for NCDs prevention. Tonga's experience has reflected this through the formation of the National NCD Committee (NNCDC) and the respective subcommittees for tobacco control, alcohol misuse reduction, healthy activity and healthy diets. Reviews of the NCD

Strategy for 2010-2015 affirmed the utility of this approach but also identified infrastructural and governance shortcomings that were becoming obstacles to implementation.<sup>18</sup> The UNDP's MDG Acceleration Framework also echoed this observation, stating that 'inadequate coordination and cross-sectoral collaboration' was a key bottleneck in the successful implementation of NCD control and prevention.<sup>22</sup> The Tongan government has attempted to rectify this in the ongoing NCD strategy for 2015-2020 by establishing Tonga Health as secretariat for the strategy, with multi-stakeholder representation, to provide oversight for the Ministry's efforts, provide operational planning for funding distribution and simplify reporting structures.

While this is a welcome step and is expected to improve results, there is room for greater complementarity between various NCD prevention interventions, particularly those related to revenue generation through taxation of tobacco, alcohol and food and health promotion and marketing programmes. In the context of NCD-related taxes, the crucial ingredient for success according to the FAO is 'collaboration between the Ministries of Health, Revenue & Customs and Finance'.<sup>24</sup> This includes the need to 'use some of the revenues generated from food taxation to fund these complementary interventions by introducing hypothecation of tax revenues (earmarking part of the



**Figure-9:** Obesity in Tonga over time (WHO 2018: Country NCD Profiles: Tonga)

revenue from a particular tax for particular expenditure purposes) to finance NCD prevention and health promotion efforts (potentially through Tonga Health), as has been done in other countries'.<sup>24</sup>

### Addressing physical inactivity

A lot of work has taken place in Tonga to address low physical activity, including through sports and community-based programmes. According to programme evaluations, the focus on physical activity by Tonga Health, Ministry of Health and Ministry of Internal Affairs (MIA), including through campaigns like Fiefia Sports, 'has contributed to a changed perception of physical activity in the community with reports from multiple sources suggesting visible changes in the number of people exercising'.<sup>19</sup> However, physical inactivity overall continues to be on the rise, increasing from 23.7% in 2012 to 39.8% in 2017.<sup>15</sup> This trend is also especially pronounced among young people. The 2017 WHO Global School-based Student Health Survey (GSHS) found a 'reduction of 6.2% in those meeting the physical activity guidelines (from 25.6% to 19.4%), and a reduction of 1.4% in those attending physical education classes on  $\geq 3$  days a week (from 24.4% to 23%)' among students in Tonga.<sup>30</sup> While these reductions are not drastic, they highlight a troubling downward trend. Officials and donors have identified a lack of financial allocations for physical activity and absence of obesity programmes focused on adolescents as some of the key challenges.

### Incentivising healthy food production and imports

Tonga has achieved some success in incentivising healthy diets, reducing meat consumption through increasing taxes on meat flaps. However, overall effects on unhealthy food consumption, overweight or obesity have been limited and obesity has continued to rise at an alarming rate for both women and men (Figure 9).

Studies on food consumption in Tonga have shown that unhealthy consumption of processed, imported food is not necessarily a question of preference; the population at large prefers healthier, traditional alternatives, and unhealthy diets tend to be

more related to concerns about cost and availability of alternatives.<sup>31</sup> Hence, part of the solution may lie in economic reforms involving increased tariffs or bans on unhealthy food imports (in particular mutton flaps), increased taxes on SSBs and reduced tariffs on healthy imported foods to make them less costly.

However, to sustainably address the question of unhealthy diets, multi-stakeholder efforts are needed, involving the Agriculture Ministry in particular, to put in place incentives that encourage production of local food substitutes and alternative food products. According to the FAO (2017), such policies could include 'supply-side investments to ensure an affordable, accessible and sustained supply of nutritious substitutes such as fish, marine resources livestock and local root crops'.<sup>24</sup> This could involve 'scaling up of existing pilot projects/small projects such as the poultry distribution project, home/vegetable gardens (including 'key-hole' gardens), and fisheries special management areas'.<sup>24</sup>

With fruits and vegetables, there is a challenge of seasonal availability; for this purpose, underutilized foods high in nutritional value can be identified for promotion. Further, there is also a need to explore manufacturing and food processing innovation to enable improvements in domestic food production, such as the use of green leaves as vegetables or a mixture of 'early-bearing, later-bearing and climate-resilient varieties of the same foods'.<sup>24</sup>

Improved extension facilities are also critical for boosting

local production; there is a need to invest in facilities and technologies for food preservation and processing, some of which can be done through encouraging small businesses in these areas. Further, addressing the low knowledge on food composition of local foods should be a key priority to highlight the nutrient content and benefit of local foods compared to imported food.<sup>25</sup> Subsidies for crops that would protect against NCDs, including various varieties of fruits, nuts and vegetables, should also be considered.

### **Greater efficiency to ensure fiscal space for NCD prevention**

Government health expenditure accounts for 84% of health spending in Tonga, and is among the highest for LMICs. However, as outlined by the Hou et al (2016), the Pacific is presented with a number of looming fiscal challenges including 'the challenge of sustaining increased public health expenditure in the face of deep-rooted structural constraints, including historically low rates of economic growth; low rates of government tax revenue as a percentage of GDP; and high vulnerability to external economic shocks and natural disasters'.<sup>7</sup>

All of this raises the question as to whether the expansion of public health expenditure as a share of the economy is financially sustainable. Furthermore, preventative healthcare as a proportion of health expenditure has remained low (and only in the past year has it increased to over 10% of the health budget), while the amount spent on curative services and overseas treatment has continued to rise and strain the country's finances.

Given these challenges, it is important that allocative and technical inefficiencies are addressed. Examples of such inefficiencies identified by studies in Tonga include 'the use of doctors for child delivery when well-trained midwives could perform the same role; the failure of procurement systems to purchase medicines at the lowest available prices; the use of tertiary care hospitals for the provision of basic, primary care simply because primary care facilities are inadequately supplied; and inadequate monitoring and surveillance of NCDs incidence'.<sup>8</sup> To address these inefficiencies and improve space for NCD prevention efforts, resources need to be moved toward more cost-effective primary care services, in which NCD screening needs to be integrated. Improvement in the quality of primary care services is a crucial intervention that could allow for treatment and control of diseases early in their onset, thus lowering hospital admissions and associated costs.<sup>8</sup>

Another key measure that could help reduce inefficiencies is the collection and tracking of baseline

data and trends in consumption and revenues to assess whether policies and tax measures to reduce unhealthy consumption are working.<sup>21</sup> According to health officials interviewed, "*Reform is also underway to improve processes for budgeting, tracking taxes, budget life cycles, use of the One Health Tool for costing of health interventions, and expenditure tracking, among others.*"

In terms of data, policymakers also need to start measuring NCD prevention related indicators, to be able to monitor, for instance, NCD financing relative to GDP, the proportion of population below the poverty line that can afford a quality food basket, and catastrophic spending due to NCDs.

### **Adoption of the 'settings' approach**

The adoption of the 'settings approach' has been a key component of NCD control and prevention in Tonga. According to WHO, 'a setting is where people actively use and shape the environment; thus, it is also where people create or solve problems relating to health. Settings can normally be identified as having physical boundaries, a range of people with defined roles, and an organizational structure'.<sup>32</sup>

In Tonga, this has been implemented through the establishment of health promoting churches, schools, workplaces and other similar partnerships. These 'settings' are supported by designated staff within the MOH's Health Promotion Unit (HPU).<sup>17</sup> The settings approach has been key to the MOH's efforts to promote physical activity and healthy diets through programmes in schools, workplaces and churches. Implementing such an approach requires a good understanding of each stakeholder's potential interest in and the specific opportunities they offer for a health promotion partnership to ensure it can be sustainable. For example, the curriculum is central to schools and their outcomes; hence sustainable partnerships for health promotion in schools can be created by complementing and supporting curriculum implementation.<sup>18</sup>

### **Political leadership to tackle NCDs**

Political support at the highest level has been a notable strength and enabler of Tonga's NCD efforts so far. The former Health Minister and Deputy Prime Minister Bill Tangi played a crucial role in developing Tonga's first NCD Plan and pushing for the issue to be taken seriously at a legislative and policy level.<sup>17</sup> He also helped to secure the involvement of key government ministries, the medical community, church leaders, and the regional leadership in the Pacific.

The role of Tonga's Royal Family has also been a constructive one in this regard. His Majesty Taufa'ahau

Tupou IV was a sportsman and a public advocate of healthy lifestyles, while his successor His Majesty George Tupou V engaged in efforts to address diabetes, and instigate research collaborations between Tonga and other nations. Political leadership is particularly important for NCD prevention given the complex multi-sectoral actions needed for NCD prevention, which require a whole-of-government response, and because of the existence of powerful lobbying groups (from the food and beverage to the tobacco and alcohol industries, among others) that have vested interests in maintaining the status quo by appealing to economic and trade concerns of governments.<sup>17</sup>

## Conclusion

An examination of Tonga's experience illustrates many important lessons for those interested in the challenge of NCD prevention around the world. The country belongs to a region with a massive NCD burden and an NCD 'epidemic' that is among the worst in the Pacific region, while it has also taken creditable policy steps, including financing efforts, for NCD control and prevention, with some visible instances of success. This has led to success in some areas, such as tobacco, while others risk factors like obesity, physical activity and unhealthy eating, have continued to rise and pose increasing health challenges.

It is important to view Tonga's efforts to combat NCDs as part of a regional and cooperative response to NCDs in the Western Pacific Region. Tonga's policies for NCDs are closely tied to regional initiatives guided by the WHO Western Pacific Region, as exemplified in the 'Healthy Islands' initiative for health protection and promotion, which has driven policy advocacy and mobilization for NCD prevention. This regional approach to NCDs has resulted in increased investment in research, programmes and action to address NCDs and resulted in the execution of plans like the Western Pacific Regional Action Plan for the Control and Prevention of Non-communicable Diseases (2014-2020). The role of regional organizations like the Pacific Community and WHO has been key in this regard.

Tonga has been a regional pioneer of integrated NCD planning, being the first country in the Pacific to devise a national NCD strategy. The country's 2010-2015 strategy was found to have resulted in significant reductions in physical inactivity, reduced alcohol consumption and increased fruit and vegetable consumption. However, tobacco consumption and obesity remained pressing challenges. A new 5 year NCD strategy (2015-2020) is now nearing completion, which focuses on healthier starts to life for infants, healthier lifestyles (with a focus on children

and adolescents), improved early detection and strengthened monitoring and surveillance.

Tonga's multi-sectoral approach – implemented through its national NCD committee and risk-factor-specific subcommittees involving multiple ministries and departments - has been central to its success. However, inadequate coordination and infrastructure has remained a challenge which the government has attempted to rectify through the establishment of Tonga Health as the secretariat for NCD prevention with multi-sectoral representation to provide oversight for the Ministry of Health, operational planning and simplify monitoring and reporting structures. Tonga's experience shows that the establishment of NCD-specific institutions can provide considerable advantages in steering effective prevention inter-sectoral, all-of-government responses. However, as the country's experience shows, this still does not guarantee increased financing for NCD prevention (which has remained static in recent years).

Much of Tonga Health's health promotion funds are spent on public awareness campaigns, community outreach, advertisements, observation of 'health days' (like World Diabetes Day), billboards, and radio programmes. However, key gaps in communication efforts remain, with household surveys showing that Tongans still lack clear ideas about what healthy products are and how to access them.

Tonga has pioneered the use of tax policy in the Pacific to address demand for a number of unhealthy products, and has significantly impacted consumer behaviour through its taxation of tobacco, alcohol and unhealthy food products, which has resulted in reduced consumption of cigarettes, beer and spirits and mutton flaps and turkey. This suggests the efficacy of taxation as a measure to address NCD risk factors through price shocks. However, this has still not fully addressed unhealthy consumption issues, as many members of the public have simply switched to local, cheap and unhealthy substitutes, including Tapaka Tonga tobacco and Tongan keva among others.

There needs to be a concerted effort to impose unified tax rates for both imported unhealthy products and their local substitutes. Commercial tobacco substitutes like Tapaka Tonga have now been brought under the excise tax net, which will both be a source of additional revenue and will help bring down NCD incidence. Further, warning labels must be included in Tapaka Tonga packs similar to imported cigarettes. Similarly, unhealthy mutton flaps substitutes like salted beef and corned beef also remain outside of the excise tax net, which reduces the efficacy of

tax measures to reduce NCDs, which needs to be rectified.

Improving data collection on taxation and consumption is critical to assess whether these policies are working. Tonga needs objective monitoring and evaluation frameworks for NCD taxes, duties and tariffs is critical to ensure their effectiveness. Evaluations of existing interventions and their impact on prices, import volumes and consumer behaviour needs to be planned before new ones are started.

The increase in revenue from NCD-related taxes – particularly from food, SSBs, and alcohol tax – has somewhat increased fiscal space needed for improving both health promotion and health services. However, this has not been accompanied by increases in budgeting for NCD prevention or health promotion, which has largely remained static in recent years. While taxes on tobacco, alcohol and unhealthy foods are not popular among the public, communities in Tonga have expressed that they would be convinced about the utility of the revenues if they are used to support and promote communities' health and their lifestyles. Hypothecation of revenues, i.e., earmarking tax revenues for NCD prevention and health promotion efforts, possibly routed through Tonga Health, would benefit both public support for the tax measures as well as enhance their public health benefits.

While taxation measures for addressing unhealthy consumption have seen some success, the high cost and unavailability of healthy food alternatives still presents a major challenge. Tonga attempted to do so through introducing consumption tax exemptions on imported fruits and vegetables in 2016; however, these exemptions were not passed on to consumers and did not result in a significant change in consumer behaviour. Stronger policy incentives are needed, focused on local production in particular. To improve the availability of healthy food alternatives, Tonga requires supply side investment in nutritious food alternatives such as fish, marine resources livestock and local root crops. These include manufacturing and food processing investments, improvements in extension facilities, subsidies for nutritious and climate-resilient crop varieties as well as scaling-up of projects involving poultry distribution, home vegetable gardens (including 'key-hole' gardens), and improved fisheries management. These may be financed through increased tariffs and taxes on unhealthy imported products.

Tonga's experience of sports to reduce physical inactivity is also instructive. With support from Aus-Aid, and through a partnership between the Ministries of Sport and Health, Tonga's focus on sports to reduce physical

inactivity has had some impact, particularly through initiatives like the Kau Mai Tonga netball project and FieFia Sports, which have resulted in marked improvements of young women in sports. Such projects have become an important avenue for social marketing of NCD risk reduction and its successful implementation (even after donor funding ceased) was helped by multi-sectoral collaboration, documentation and planning. However, improving adolescent physical inactivity remains a challenge.

Tonga's overall progress has been made possible in part through political buy-in from the highest levels of government, including leadership from the Health Minister Tangi, who effectively engaged other ministries, associations and communities. Support from the Royal Family has also been key to the advocacy for healthy living and reducing NCD risk factors. Maintaining political support for NCD policies is critical given the need for collaboration and the influence of economic lobbying groups pressuring governments to reduce NCD-related taxes and tariffs. Greater political will is still needed to both be able to increase tobacco and alcohol taxes and allocate a greater proportion of the revenue from those taxes to NCD prevention efforts.

### Recommendations

1. Move fiscal resources towards cost-effective primary care services that integrate NCD screening and prevention.
2. Increase allocation for communication and health education within health promotion funds.
3. Increase tobacco tax to the WHO-recommended minimum 75% of retail price.
4. Increase excise tax on Tapaka Tonga along with health education campaigns on the impact of all tobacco products and comprehensive restrictions on public smoking.
5. Consider earmarking of revenues from unhealthy food consumption to finance NCD prevention and health promotion.
6. Increase tariffs and excise taxes on or ban imports of unhealthy food products (in particular, mutton flaps) and reduce tariffs and taxes for healthier food imports.
7. Support investments for healthier food production, including for fish, marine resources, livestock and local root crops.
8. Scale up existing pilot projects like the poultry distribution project and home/vegetable gardens.

9. Consider subsidies for crops that would enable healthier eating habits, including nuts, vegetables and various varieties of fish.
10. Collect baseline data and track trends in consumption and government revenue as taxes and duties change.
11. Establish objective monitoring and evaluation frameworks for NCD taxes, duties and tariffs.
12. Continue and expand physical activity promotion and campaigning through sports.
13. Cultivate political support for increased taxes on unhealthy consumption and increased earmarking for health promotion efforts.

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