The Scottish Government International Development Fund: designing a new International Development non-communicable disease programme

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Executive Summary

This report responds to a commission by Scottish Government (SG) to design a new international development health programme providing support to the Governments of Malawi, Rwanda and Zambia with a specific focus on non-communicable diseases (NCDs). Findings were informed by a review of the literature and policy documents; semi structured interviews with colleagues working in development in health and NCDs at global, regional and national levels. These included colleagues from respective Ministries of Health, the World Health Organisation and other United Nations (UN) partners, third sector organisations and academic institutes. A workshop with Scottish Government colleagues provided feedback on the proposed theory of change and next steps.

Globally NCDs are the leading cause of death and disability, killing around 41 million people each year. This number is likely to rise with the World Health Organisation (WHO) predicting that NCDs will be the main cause of death and disability in sub-Saharan Africa (SSA) by 2030.[1] Indeed, many countries are facing a 'double burden' with increasing rates of NCDs coupled with ongoing high mortality from communicable disease. NCDs are inextricably linked to poverty, and amongst the poorest billion, more people under 40 years old are dying from NCDs, than HIV, tuberculosis and maternal deaths combined.[2]

The challenge of NCDs in low-and middle-income countries including Malawi, Rwanda and Zambia is well recognised. The WHO Global Action Plan provides a roadmap for Member States to work towards with the intent of supporting them to reduce premature mortality by one third from NCDs and meet Sustainable Development Goal 3.4.[3] Alongside this, WHO has published "Best Buys" which provide a summary of the most cost-effective interventions able to help control and manage NCDs. The WHO Package of Essential NCD Interventions for primary health care (PEN) and the WHO Package of Essential NCD Interventions Plus (PEN Plus) for chronic and severe NCDs outline minimum service delivery standards for Member States to work towards.[4] Pen Plus was ratified by Member States of the World Health Organisation Regional office for Africa (WHO AFRO) in August 2022. Despite this, NCDs are underfunded receiving less than 2% of development assistance for health. Very little change has been seen in the amounts allocated towards NCDs.[5]

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[1] See WHO (2022) Noncommunicable diseases factsheet [accessed on 23/12/2022]; and Africa CDC (2022) Africa CDC non-communicable diseases, injuries prevention and control and mental health promotion strategy (2022-2026).

[2] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

[3] See WHO (2013) Global Action Plan for the Prevention of Noncommunicable Disease 2013-2020; and UN Sustainable Development Goals for Health [accessed on 13/2/2023]

[4] See PAHO (2021) SHAKE the salt habit; WHO MPOWER initiative [accessed on 31/12/2022]; WHO (2020) Package of essential noncommunicable (PEN) disease interventions for primary health care; NCDI Poverty Network – Pen Plus [accessed on 28/12/2022]; WHO (2020) HEARTS: Technical package for cardiovascular disease management in primary health care: Risk-based CVD management; WHO SAFER alcohol control initiative [accessed on 31/12/2022]; WHO (2018) ACTIVE: a technical package for increasing physical activity [accessed on 31/12/2022]; and WHO (2017) Tackling NCDs: 'best buys' and other recommended interventions for the prevention and control of noncommunicable diseases.

[5] WHO (2013) Global Action Plan for the Prevention of Noncommunicable Disease 2013-2020

A significant proportion of the populations of Malawi, Rwanda and Zambia live in poverty with dependence on external finance to support delivery of healthcare.[6] Around 35-50% of deaths are a consequence of NCDs with each country developing and publishing national policies and plans including for the delivery of Pen and Pen Plus.[7] Despite the increasing burden of NCDs and reliance on development partner support for delivery of health services, support for prevention and management of NCDs remains very low. This leaves an important opportunity for Scottish Government to share their skills and expertise globally and at country level to raise awareness of the importance of NCDs across the region with a specific focus on the three priority countries.

The proposed design of the programme includes three components. The first is focused on raising awareness and attention to NCDs at global level through work with international partners. The second is on the national scale up of PEN and Pen Plus (Malawi and Zambia) and support for the expansion of PEN Plus to include palliative care (Rwanda). The third component focuses on peer-to-peer learning and support.

[6] See The World Bank – Poverty headcount ratio at national poverty lines, Rwanda [accessed on 23/12/2022]; Global Financing Facility – Zambia data portal [accessed on 29/12/2022]; Global Financing Facility – Malawi data portal [accessed on 29/12/2022]; UNICEF (2021) Health Budget Brief: Investing in Children's Health in Rwanda, 2021/22; and UNICEF (2021) Health – Malawi Budget Brief; UNICEF (2022) Zambia Health Budget Brief.

[7] WHO (2022) Noncommunicable Diseases Progress Monitor 2022

Introduction

This report presents findings of a commission from the Scottish Government (SG) to help redesign its development work on health in support of the Governments of Malawi, Rwanda and Zambia with a specific focus on non-communicable diseases (NCDs). The commission is in alignment with shifts in the SGs development priorities, with the ambition of more strategic, impactful and evidence-based programming. This includes specific focus on programming that is partner led, that considers and uses decolonised approaches to development where possible with a focus on gender mainstreaming.

The report uses three main methods; a desk based review of the literature; key informant interviews; and a workshop with SG colleagues. This document presents findings to SG in the form of a report and includes a strategic case, an appraisal case and commercial case. The strategic case outlines why support is required by the SG to support the three partner countries to tackle NCDs. This includes a summary of why NCDs are of interest with a focus on sub-Saharan Africa (SSA), how NCDs are linked to poverty, current funding allocations available for NCDs and the rational for SG investment in NCDs in Malawi, Rwanda and Zambia. The appraisal case outlines the impacts and outcomes expected through the SG international health programme and compares potential options available to SG alongside the evidence available to support the options. A Theory of Change (ToC) of the preferred option has also been developed. The third section covers the commercial case, comparing the value for money of the proposed options to global NCD standards and introduces potential delivery options.

The evidence for investing in NCDs is compelling. Globally NCDs are the leading cause of death and disability, killing around 41 million people a year and this is predicted to rise to become the main cause of death and disability in SSA by 2030.[8] Indeed, many countries are facing a 'double burden' with increasing rates of NCDs coupled with ongoing high mortality from communicable disease.[9] The preferred approach for SG investment in Malawi, Rwanda and Zambia includes programming at global, regional and national level with a focus on scaling up access to services at district level as per PEN Plus the regional strategy adopted by WHO Member States. This is either through direct support for service delivery, increasing the number of trained health workers or integration of palliative care into NCD services.

[8] WHO (2023) Noncommunicable diseases factsheet; Africa CDC (2022) Africa CDC non-communicable diseases, injuries prevention and control and mental health promotion strategy (2022-2026).

[9] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

Methodology

Mixed methods were used including a literature and policy review of current country specific and continent specific peer reviewed articles, country policies and international documents, and key informant interviews (KIIs). A theory of change (ToC) was developed based on the evidence. The methodology has been split into phases, to align with the deliverables and activities of the project. In reality, these phases were carried out in parallel.

Literature review

A literature review was conducted to better understand practice within the three partner countries, and throughout SSA. Searches were conducted on Embase, MEDLINE, PubMed, Global Health, Web of Science, Scopus, and EBSCOhost using search terms. Pre-identified key words were applied during the search across the databases. Further documents were identified through review of references. Peer reviewed journal articles, as well as grey literature were included in the literature review, with a specific focus on policy and evidence documents from the three partner countries, and countries with more developed NCD strategies in SSA. All evidence was accessed between September and December 2022.

Articles referring to other countries in SSA were included. Primary quantitative and qualitative studies were included in this review. These included observational studies, randomised controlled trials, non-randomised control trials, reports of interventions, and economic studies. Studies not in English or conducted outside SSA were excluded. More so, studies published before 1992 were not considered in this review. Internal reports of both the SG's previous collaborations in partner countries and in Scotland were also included.

Policy review

A policy review was conducted to give an understanding of country priorities and progress against domestic, regional and international plans. SG strategy documents were reviewed to give an understanding of current development spend on health including of reports from previous implementing partners. Policy analysis of national NCD policies and programmes were conducted for each of the three partner countries, and where possible for other countries in SSA. In addition NCD policies and programmes from other actors active in NCDs in the partner countries were reviewed, including the private sector, local and international non-government organisations (NGOs) and UN agencies. Preidentified policy documents and reports identified by the consultants were included, including such as WHO reports and mid or final evaluations if global strategies and plans. The policy review included all NCDs

including those initially considered of interest by the Scottish Government in the invitation to tender, as well as specific interventions / areas that partner countries prioritised.

Key Informant interviews

Qualitative, in-depth KIIs were conducted through online video calls from 27/10/2022 to 16/12/2022. Both consultants were present at the majority of interviews, and transcripts were taken with the consent of the KI. These transcripts were then fed into an excel spreadsheet for analysis and extraction of themes. Purposive sampling was used to form an initial list of KIs. This included members of the partner countries' Ministries of Health, country representatives from WHO where available, and donors and health professionals from in-country NGOs. Further KIs were identified using snowballing.

An interview tool was drafted to assist these KIIs. It consisted of semi-structured questions and was developed to subtly probe informants to elicit information, opinions and experiences. A copy of this can be found in Appendix 1. The transcribed KIIs were analysed using thematic analysis conducted independently by each consultant and then cross checked. Ideas and patterns were identified in the transcripts. These were coded, and the codes were grouped into themes. A total number of 15-25 KIs were expected to be interviewed, selected for their expert knowledge of the NCD landscape within the three partner countries. In total, 48 KIIs were conducted, 16 of these with global connections were interviewed, seven from Malawi, nine from Rwanda and 16 from Zambia.

Initially focus groups were planned for discussions with colleagues in each of the partner countries. However, due to small number of actors working in NCDs in each country, and their focus on specific NCDs it was not possible to conduct robust focus groups able to generate discussion on NCDs as a whole.

A workshop with the Scottish Government International Development team was conducted online to identify common priorities and values for the programme and get feedback on proposed options for the design. The workshop used an interactive format. It was attended by five members of the team. The participants were asked to anonymously rank their priorities for the SG International Health programme, and interactive activities were carried out to generate discussion around proposed designs.

Validity

The validity of the data was ensured by using a mixed methods approach, including literature and policy review, interviews, workshops and the theory of change. Peer debriefing, through discussion with the SG's Global South panel in February 2023 was used to further check validity. An audit trail was kept, through transcription of the interviews.

The project was designed in collaboration with the SG. Selection bias was considered a risk with the KIIs. This was limited by using purposive and snowball sampling starting with consultants' own professional contacts and broadening these until saturation was reached. Interviewer bias was reduced by the presence of both consultants who independently transcribed conversations. Transcripts were reviewed by the consultant not conducting the interview and themes extracted for cross verification. Response bias was a relevant challenge to this process, as participants may feel there are potential gains individually or as an organisation from this project. Open questions were used, which were neutrally worded. Having prolonged engagement with participants mitigates the risk of participant bias; however, this was not always possible due to the relatively short length of the project. Funding decisions will be made using SG processes further limiting the potential for participant bias.

Limitations

The greatest limitation was that the consultants conducted this review remotely, outside the partner countries and that both consultants were non-national staff. Whilst the consultants' network and range of contacts in the three countries, alongside their experience working in the partner countries helped mitigate this to some extent, some potential contacts or connections may have been missed due to the timeline and the way in which country contacts were identified which may have resulted in some inherent bias. In addition, there was a reliance on national colleagues in providing cultural and local knowledge.

The snowballing used by the consultants to identify KIs is time-consuming and given the short time frame available to conduct the research, does leave the potential for exclusion of local experts. This was most pronounced in Rwanda where snowballing took the most time in terms of identification of potential KIs. This was mitigated by using triangulation from multiple sources to ensure all relevant KIs were reached. In Malawi and Zambia, saturation was achieved sooner than in Rwanda.

Participants in the KII may have felt that there was a potential for gain through the interviews. To ensure there was minimal bias in the interviews, the consultants were clear that they were not involved in the final selection process, and the KIIs were for information collection only.

Initially, the consultants planned to conduct focus group discussions (FGDs), however, due to the relatively low number of organisations working in the NCD field, the wide range of areas covered under the NCD umbrella, with many KIs having specialist interests in a particular NCD, FGDs were not felt to be the most efficient or effective method of information gathering. FGDs may have offered a different dynamic and generated more varied data.

Ethics

Multiple sources for identifying stakeholders were used including SG contacts, consultants' professional contacts, Ministry of Health (MoH) contacts, and NGO contacts. All participation in KIIs was voluntary. Participants were informed they are free to withdraw or leave at any point, without having to provide a reason and with no negative repercussions from withdrawal. Informed verbal consent was gained for all KIIs. Interviews were transcribed by the consultants during the interview. Identities of the participants have been kept confidential and any defining characteristics removed from the final report. Interviews were conducted by both consultants to reduce the risk of interviewee bias, and to allow transcripts to occur in real time. The transcripts were reviewed by the consultant who did not transcribe to avoid any interviewer bias.

Strategic Case

Why is Scottish Government support required?

1. **Scotland and the SG have a long history of providing health development support** to SSA in particular, to Malawi, Rwanda, and Zambia. SG are currently reviewing their 2023 development strategy which will guide investments in international health programming. SG have identified non-communicable diseases as a potential area for collaboration across the three countries.

2. Current SG health development programmes have built upon the 2008 small grants funds, and focus on a wide range of interventions, from support to a dental school, to individual support to NGOs to deliver school meals, community ear and hearing care and to improve maternal and child health.[10]

3. **Scotland has longstanding expertise in delivering NCD programmes domestically**, whether integration of routine diagnosis and management of NCDs into primary care systems, to setting up of comprehensive surveillance and monitoring systems for those living with diabetes mellitus, to early implementation of tobacco control legislation, to exploring the need for and use of alcohol and sugar taxation as part of public health policy. **Scotland is therefore well placed to share learning beyond its borders**.[11]

4. This report provides the background and context for investing in the NCD space in Malawi, Rwanda and Zambia. The definition of NCDs varies globally, however, for the purpose of this report NCDs refers to those identified in the Brazzaville Declaration including cardiovascular diseases, diabetes, cancers, chronic respiratory diseases, haemoglobinopathies (in particular sickle cell disease), mental disorders, violence and injuries, and oral and eye diseases.[12]

Why should the international community support efforts to tackle NCDs in SSA?

5. **The case for investing in NCDs in SSA is compelling.** Globally non-communicable diseases (NCDs) are the leading cause of death and disability, killing around 41 million people each year. This accounts for around 71% of all global deaths.[13]

[10] The Scottish Government (2020) Zambia Development Programme 2017-2022: Grant Awards and The Scottish Government (2018) International Development Fund: Malawi projects 2018-2023

[11] Scottish Care Information Diabetes Collaboration [accessed on 23/12/2022] and Ash Scotland: Tobacco control legislation in Scotland [accessed on 23/12/2022]

[12] WHO Africa (2011) The Brazzaville Declaration on Noncommunicable Diseases Prevention and Control in the WHO African Region

[13] WHO (2023) Noncommunicable diseases factsheet

"This is a time bomb for Zambia, as they [external partners] are not supporting NCDs health systems." Zambian Academic

6. **The WHO predicts that by 2030 NCDs will be the primary cause of death across SSA** with around 3.8 million premature deaths (51% of all premature mortality). It is anticipated that the total number of deaths from NCDs, injuries and mental health conditions will at least triple (16.6 million deaths) by 2063 and will account for 89% of the total.[14]

7. In SSA it is estimated that the proportion of deaths from NCDs varies between 27% to 88% depending on the country.[15] The total share of deaths caused by NCDs has increased from 24.2% in 2000 to 37.1% in 2019 with over 2.1 million people dying prematurely (<70 years of age) across the region. In terms of disability, **NCDs cost the region over 225 million disability adjusted life years (DALYs) in 2019 compared with 90.6 million in 1990**. Injuries resulted in an additional 0.6 million premature deaths and 41 million DALYs.[16]

"You can find all the ARV medications but not the NCD medications. People with HIV are dying from stroke and other things. A lot of people are dying prematurely, HIV positive and negative, from NCDs." Zambian Academic

8. The region is facing a **rapid demographic and epidemiological transition that includes a shift in health profile** from one that was previously dominated by communicable disease to one with an increasing predominance of NCDs. This is further supported by age standardised DALY rates which show that DALYs lost from NCDs (21,757 DALY's per 100,000 population) are now almost equivalent to those lost communicable diseases, maternal and neonatal causes (26,491 DALY's per 100,000 population) (Figure 1).[17] Indeed, many **countries are already struggling to tackle this 'double burden'** with consequent impacts on the ability of health systems to respond and allocate resource to NCDs due to competing demands.

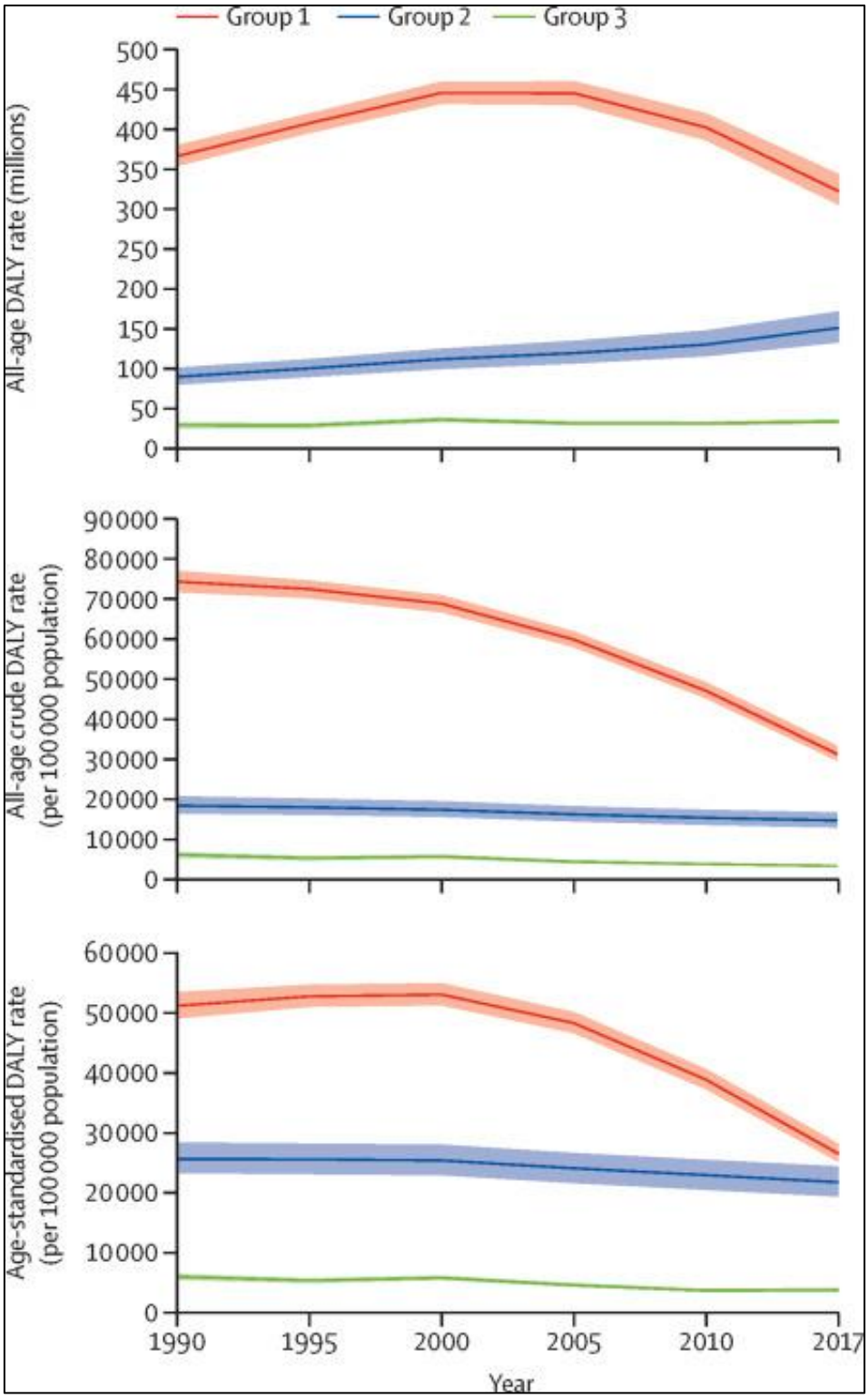
[14] Africa CDC (2022) Africa CDC non-communicable diseases, injuries prevention and control and mental health promotion strategy (2022-2026).

[15] WHO Africa (2022) Pen-Plus – A Regional Strategy to Address Severe Noncommunicable Diseases at First Level Referral Health Facilities

[16] Gouda, H.B. et al (2019) Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study 2017. The Lancet Global Health. Volume 7, Issue 10, E1375-E1387.

[17] Ibid.

Figure 1: Trends of cause groups 1, 2 and 3 in Sub-Saharan Africa (1990-2017)[18]



Source: Gouda, H.N. et al (2019) [Burden of non-communicable diseases in sub-Saharan Africa, 1990-2017: results of the burden of disease study 2017](). The Lancet Global Health. Volume 7, Issue 10, E1375-E1387. Reproduced under CC BY license.

[18] Key: Graphs from top to bottom: 1) Absolute disability adjusted life years (DALYs) (millions); 2) All-age DALY rates (per 100 000 population); 3) Age-standardised DALY rates (per 100 000 population). Shaded regions are 95% uncertainty intervals. Group 1 = communicable, maternal, neonatal, and nutritional disorders. Group 2 = NCDs. Group 3 = injuries.

9. NCD risk factor surveillance suggests that **most adults in SSA are exposed to at least one risk factor** whether tobacco consumption, harmful alcohol use, unhealthy diet, physical inactivity, obesity or high blood pressure and there is growing concern that the burden of disease will continue to increase with increasing rates of smoking and poor dietary practices with ensuing pressure on health systems (Figure 2).[19]

Figure 2: Top 15 Risk factors ranked by attributable burden of disease for Sub-Saharan Africa Region (in 2010)

Global rank		Southern SSA	Eastern SSA	Central SSA	Western SSA
1	High blood pressure	2	6	5	6
2	Tobacco smoking, including second hand smoke	5	7	12	10
3	Alcohol use	1	5	6	5
4	Household air pollution from solid fuels	7	2	2	2
5	Diet low in fruits	8	8	11	13
6	High body mass index (BMI)	3	14	18	15
7	High fasting plasma glucose	6	10	13	11
8	Childhood underweight	9	1	1	1
9	Ambient particulate matter pollution	25	16	14	7
10	Physical inactivity and low physical activity	11	15	15	16
11	Diet high in sodium	13	21	17	18
13	Iron deficiency	10	4	4	4
14	Suboptimal breastfeeding	4	3	3	3
17	Diet low in vegetables	15	23	23	20
19	Drug use	12	19	24	22
23	Intimate partner violence	14	18	20	23
25	Unimproved sanitation	18	9	8	9
29	Vitamin A deficiency	17	11	7	8
31	Zinc deficiency	21	13	10	14
34	Unimproved water source	27	12	9	12

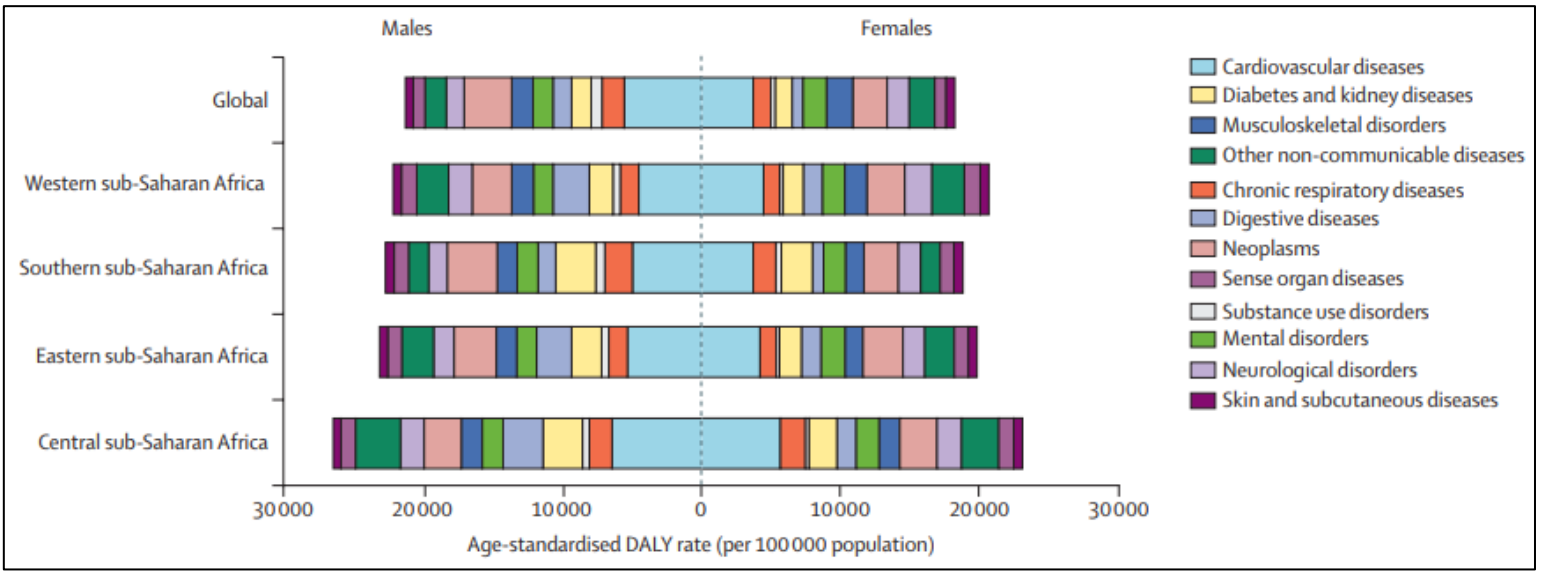
Ranking legend	1-5	6-10	11-15	16-20	21-25	26-30

Source: Marquez, P.V.; Farrington, J.L. (2013) The challenge of non-communicable diseases and road traffic injuries in Sub-Saharan Africa: an overview. Washington, D.C.: World Bank Group.

[19] WHO Africa (2015) Report on the status of major health risk factors for noncommunicable diseases: WHO African Region, 2015.

10. **Cardiovascular diseases (predominantly strokes driven by hypertension) were the main cause of disease burden from NCDs in SSA in 2017** contributing around 15.1% of the total NCD disease burden, as shown in Figure 3. This was **followed by neoplasms and mental health** related issues which accounted for around 11.2% and 9.0% of the disease burden respectively. In terms of neoplasms, cervical and breast cancer are the leading causes of disease burden in 2017, with cervical cancer closely linked to HIV.[20] Diabetes also causes a great deal of morbidity, with an increase in DALYs of 126.4% between 1990 and 2017. Late diagnosis exacerbates the impact of these conditions on the region.[21] However, in contrast to assumptions on NCDs being an issue of aging, NCDs in SSA are prevalent across the full life course particularly for the poorest and most vulnerable.

Figure 3: Burden of non-communicable diseases globally and by sub-Saharan African region (2017)



Source: Gouda, H.N. et al (2019) Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study 2017. The Lancet Global Health. Volume 7, Issue 10, E1375-E1387. Reproduced under CC BY license.

11. Palliative care is an essential component of NCD care. In 2014, the World Health Assembly adopted a resolution to integrate palliative care into national health policies. Despite this, only 50% of countries have integrated palliative care into their NCD policy**.** During KIIs palliative care was often not brought up spontaneously by participants as a NCD area of focus, upon direct questioning all participants strongly emphasised the importance of this neglected area**. Access to essential medications is essential to the**

[20] Gouda, H.N. et al (2019) Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study 2017. The Lancet Global Health. Volume 7, Issue 10, E1375-E1387; and Stelzle, D. et al (2021) Estimates of the global burden of cervical cancer associated with HIV. The Lancet, Volume 9, Issue 2, E161-E169.

[21] Gouda, H.N. et al (2019) Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study 2017. The Lancet Global Health. Volume 7, Issue 10, E1375-E1387.

delivery of quality palliative care services but is challenged by lack of availability to opiates and other commodities. Only 13% of LICs report general availability of oral morphine.[22]

How are NCDs linked to poverty?

12. In 2020 a Lancet commission found that one third of the disease burden in the poorest billion globally are a consequence of NCDs. They state that ***'the world's poorest billion are being systematically deprived of life saving and life changing interventions'*** **for NCDs.** With more than 90% of the poorest billion living in rural areas of LMICs in SSA and South Asia, aged under 55 years of age and at risk of developing NCDs at younger ages, it is clear that **NCDs are inextricably linked to poverty** and are therefore of relevance to development financing and programming in SSA.[23]

"85% of Malawians live in rural areas – they think NCDs are a disease of people who live in the city" Individual, Ministry of Health, Malawi

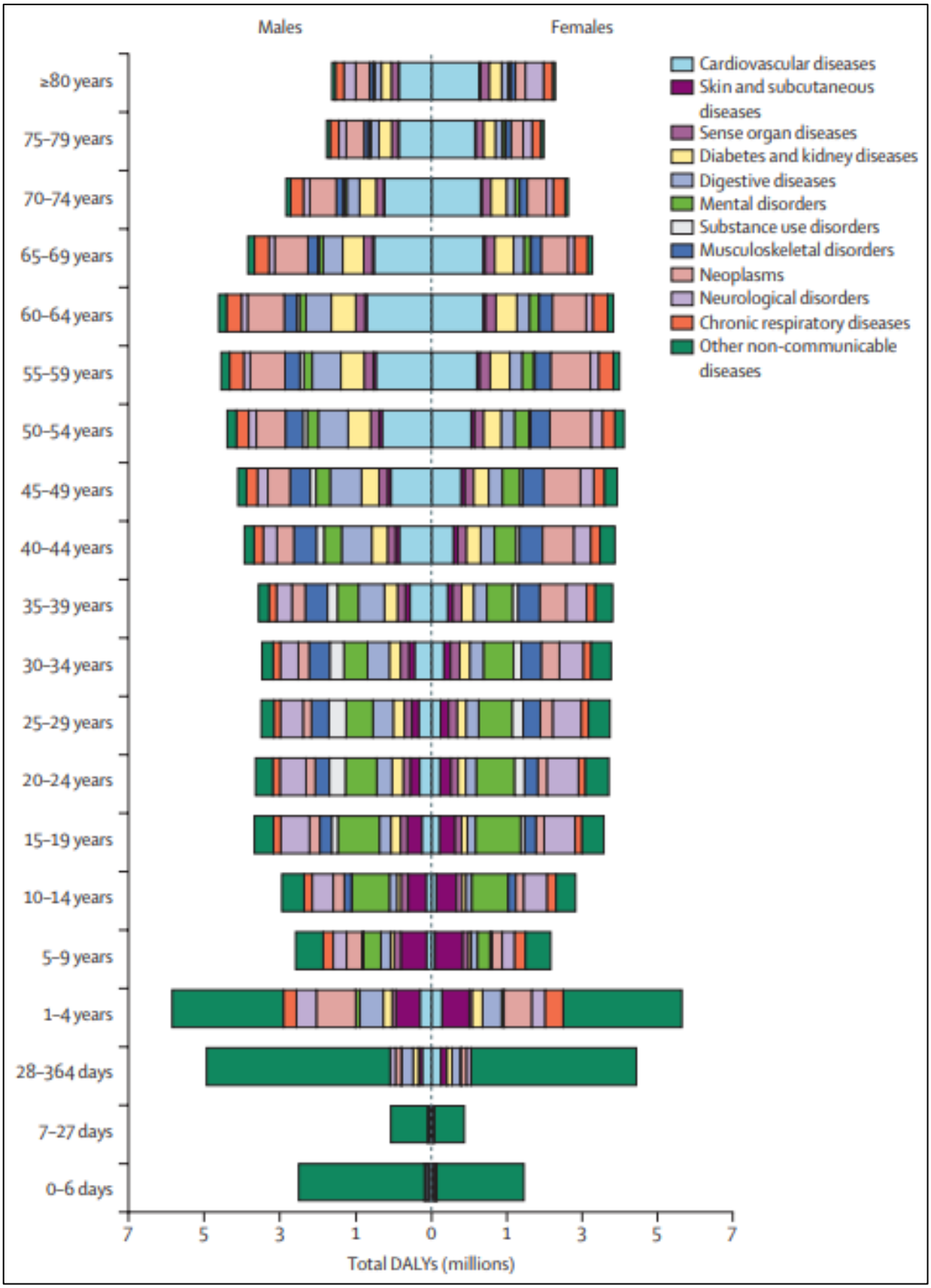
13. **The poorest living in SSA are disproportionately affected by NCDs throughout their life course**. This is contributed to by hunger, exposure to toxic environments, infectious diseases and lack of health care. In under-fives the burden is driven by congenital anomalies and sickle cell disorders with 80-90% of children with sickle cell dying before they turn five years of age. Those who survive are at increased risk of both communicable and NCDs. In 2017, mental health issues contributed a large burden in people aged 14-39 years of age (see Figure 4). Morbidity and mortality from cancer and cardiovascular disease is also higher in these groups.

"There is an unfinished MDG agenda. Donors still focus on that." Donor agency

[22] WHO (2020) Palliative care for noncommunicable diseases: A global snapshot 2020

[23] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

Figure 4: Disability adjusted life years for non-communicable diseases by age and sex in Sub-Saharan Africa (2017)



Source:Gouda, H.N. et al (2019) [Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study 2017](). The Lancet Global Health. Volume 7, Issue 10, E1375-E1387. Reproduced under CC BY license.

14. **Across the poorest billion, 800,000 deaths from NCDs are in those aged under 40 years, more than HIV, tuberculosis and maternal deaths combined** and result in 20 more years healthy life loss than those in high income countries. They account for over one third (35%) the DALYs in its population. Some of this can be accounted for by earlier age of presentation in those living in extreme poverty coupled with lower access to quality health services, but late diagnosis, lower treatment adherence and poorer quality care all play a role, as well as exposure to infectious diseases and undernutrition (Figure 5). Years of life lost due to NCDs is higher in those living in extreme poverty compared with others.[24]

Figure 5: Examples of NCDs linked to conditions of poverty

	Condition	Risk factors related to poverty
Cardiovascular	Hypertension	Idiopathic, treatment gap
	Pericardial disease	Tuberculosis
	Rheumatic valvular disease	Streptococcal diseases
	Cardiomyopathies	HIV, other viruses, pregnancy
	Congenital heart disease	Maternal rubella, micronutrient deficiency, idiopathic, treatment gap
Respiratory	Chronic pulmonary disease	Indoor air pollution, tuberculosis, schistosomiasis, treatment gap
Endocrine	Diabetes mellitus	Undernutrition
	Hyperthyroidism and hypothyroidism	Iodine deficiency
Neurological	Epilepsy	Meningitis, malaria
	Stroke	Rheumatic mitral stenosis, endocarditis, malaria, HIV
Renal	Chronic kidney disease	Streptococcal disease
Musculoskeletal	Chronic osteomyelitis	Bacterial infection, tuberculosis
	Musculoskeletal injury	Trauma

Source: Marquez, P. V., Farrington, J. L. (2013) The Challenge of Non-Communicable Diseases and Road Traffic Injuries in Sub-Saharan Africa. An Overview. Washington, DC.: The World Bank. Reproduced under CC BY license.

15. Management of NCDs often focuses on measures that relate to behaviour change and prevention rather than on unblocking barriers to access for the poorest (Figure 6). It is estimated that half (49%) the total NCD burden in the poorest is avoidable, with the

[24] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

potential to avert 2.4 million deaths and 93.8 million DALYs. However, almost half (47%) the NCD burden among the poorest billion is due to conditions not yet addressed by global NCD frameworks which tend to focus on prevention around five disease categories (cardiovascular, cancer, chronic respiratory disease, diabetes, and mental health and substance abuse). There is a general sense amongst KIIs that issues such as smoking are not currently the main driver of NCDs in the three partner countries, which is in contrast to the Global North. That said, it was also highlighted that this may change in the coming years. The commission argues by **focusing on more traditional models of NCD care we are neglecting the needs of the poorest**.[25]

Figure 6: Global Action Plan Best Buys focus of intervention[26]

Source: Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044. Permission to reproduce content secured via RightsLink.

[25] Ibid.

[26] Key to Figure 6: Global Action Plan Best Buys focus of intervention. 1: Increase excise taxes and process on tobacco products; 2: Enact and enforce comprehensive bans on tobacco advertising, promotion and sponsorship; 3: Implement plain packaging; 4: Eliminate exposure to second hand smoke; 5: Mass media campaigns on tobacco use; 6: Increase excise taxes on alcoholic beverages; 7: Ban alcohol advertising; 8: Restrict physical availability of alcohol; 9: Reduce salt intake through reformulation of food; 10: Reduce salt in public institutions; 11: Reduce salt through behavioural change; 12: Public education for physical activity; 13: Vaccinate against HPV; 14: Screening and treatment of cervical cancer; 15: Drug therapy for heart attacks and strokes for high risk of fatal or non-fatal event in 10 years; 16: Drug therapy for heart attack and strokes for moderate of fatal or non-fatal event in 10 years.

What is the policy context for tackling NCDs?

16. **There is global recognition of the challenge of NCDs.** In 2013, WHO Member States ratified the Global Action Plan (GAP) on NCDs which sets out a roadmap, policy options and nine voluntary targets to be achieved by 2025 (subsequently extended to 2030). The aim is to reduce premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases by 25%.[27]

17. In 2015 the United Nations Sustainable Development Goals (SDGs) included a **target to reduce the probability of premature death from the four main NCDs** in adults aged between 30-70 years by 30% by the year 2030.[28]

18. In 2017, a list of options of cost-effective interventions or 'WHO Best Buys' were produced for NCDs (Figure 6). These target four of the primary risk factors (tobacco, harmful use of alcohol, unhealthy diet and physical inactivity) associated with the four main NCD disease areas (cardiovascular disease, diabetes, cancer and chronic respiratory disease).

"Most countries NCDs are poorly funded and Ministry of Health's human resource are weak." UNO NCD focal point

19. In 2020 WHO launched **the Global NCD Compact 2020-2030** bringing together Heads of State and Governments to encourage Member States to **adopt best practice policies on the prevention and control of NCDs**. It will aim to deliver the Implementation Roadmap 2023-2030 of the GAP as endorsed by WHO Member States in 2022, by implementing the best-buys and WHO NCDs technical packages. These include: **PEN**: package on non-communicable disease interventions;[29] **HEARTS:** technical package for cardiovascular disease management in primary health care: risk-based CVD management;[30] **MPOWER**: measures intended to assist in the country-level implementation of effective interventions to reduce the demand for tobacco, contained in the WHO Framework convention of tobacco control;[31] **SAFER**: to deliver health and development gains caused by the harmful use of alcohol;[32] **SHAKE:** technical package for salt reduction;[33] **ACTIVE:** technical package for increasing physical activity and also including reorientation of PHC and strengthening of health systems.[3435] Due to the recent nature of these packages, no reviews have yet been carried out.

[27] WHO (2013) Global Action Plan for the Prevention of Noncommunicable Disease 2013-2020

[28] UN Sustainable Development Goals

[29] WHO (2020) WHO package of essential noncommunicable (PEN) disease interventions for primary health care

[30] WHO (2020) HEARTS: Technical package for cardiovascular disease management in primary health care: Risk-based CVD management

[31] WHO MPOWER initiative

[32] WHO SAFER alcohol control initiative

[33] PAHO (2021) SHAKE the salt habit

[34] WHO (2018) ACTIVE: a technical package for increasing physical activity

[35] WHO (2020) Global Noncommunicable Diseases Compact 2020-2030

"There has been lots of regional and global commitments but despite all this, one thing stands out. Only two countries in the region are on track to meet the SDG 3.4 targets – South Africa and eSwatini, 45 countries are not… Malawi is a poster country for PEN plus, as is Rwanda. So, we have a model of what works from these two countries and the strategy was adopted by member states this year." UNO NCD focal point

20. In 2020, a mid-term review of the GAP report showed that since inception, **the number of countries with a policy, strategy, or action plan on NCDs had almost doubled**. Half of member states however still lacked an NCD policy.[36]

21. At regional level the WHO AFRO set out recommendations in support of member states to implement the WHO Package of Essential NCD Interventions for primary health care in low-resource settings (PEN). This set out **interventions that could be delivered at primary care level and through referrals to secondary care**.[37]

22. Member states adopted PEN Plus in August 2022 at the Regional Committee for WHO AFRO setting out a **regional strategy to address severe NCDs at first referral level health facilities**. PEN Plus builds upon PEN **to expand and strengthen the capacity of primary care facilities to detect and care for those living with chronic and severe NCDs** at district hospitals with a focus on type 1 diabetes mellitus, advanced rheumatic heart disease and sickle cell disease, which are normally only treated in tertiary referral centres.[38] It is hoped that by focusing efforts on building diagnostic and complex disease management capacity at district hospital level, with routine follow up at health centre level that scale up of PEN will also be increased through supervision and mentoring for health centre staff.

"A good starting place, and one of the great advances we have made in the 15 years, is that there is now very clear and well evidenced interventions, actions, and policies that countries can turn to for guidance. 15 years ago, it wasn't clear what would work, or any examples of previous interventions, however, now we can answer all those questions." Vice President, NCD INGO

23. In 2022, African Centre for Disease Control and Prevention (Africa CDC) published the **Africa CDC NCDs, injuries prevention and control and mental health promotions strategy 2022-2026** as a catalyst, seeking to bring together policies to support Member States in their strategic actions and implementation of activities. This is an African led strategy, with a view to complement other strategies already in place. The associated implementation plans are pending.[39]

[36] WHO (2013) Global Action Plan for the Prevention of Noncommunicable Disease 2013-2020

[37] WHO (2020) WHO package of essential noncommunicable (PEN) disease interventions for primary health care

[38] Temu, F. et al (2014) Integration of non-communicable diseases in health care: Tackling the double burden of disease in African settings. The Pan African Medical Journal. Volume 18, Article number 202.

[39] Africa CDC (2022) Africa CDC non-communicable diseases, injuries prevention and control and mental health promotion strategy (2022-2026).

What is the international funding landscape for NCDs?

24. NCDs are the largest unmet need in term of health financing in LMICs and receive very little external development finance. External financial support to countries in SSA still tends to focus on the unfinished agenda of the Millennium Development Goals (MDGs) and communicable disease control. This has increased following the ongoing pandemic of SARS Co-V virus which has increased attention on Global Health Security. The 2020 mid-term review of the GAP for NCDs showed that **since 2001 only 1-2% of total Development Assistance for Health (DAH) has been targeted towards NCDs**. This plateaued in 2013 at around $800 million per year. Figure 7 shows that lack of health development assistance to NCDs is a longstanding issue, despite the high number of DALYs attributed.[40]

Figure 7: ODA Funding for Health and Disease Areas per 2009 DALY

	2008 DALYs LMIC (million)	Health Development Assistance 2007	Funding per DALY
HIV, TB, Malaria	264	US$6,315 million	US$23.9
NCDs	646	US$503 million	US$0.78
All conditions	1,338	US$22,013 million	US$16.4

Source: Africa CDC (2022) Africa CDC non-communicable diseases, injuries prevention and control and mental health promotion strategy (2022-2026). Open access.

25. Globally between 2015 and 2017, $35.9 billion was spent on communicable disease control compared to $12.2 for NCDs. Of this **95% was generated domestically for NCDs, compared to 49% for communicable disease.**[41] In terms of equity in 2011 only US$74m in external financing for NCDs went to the poorest countries accounting for 14% of all global development assistance for NCDs in 2011. This increased to US$83m by

[40] WHO (2013) Global Action Plan for the Prevention of Noncommunicable Disease 2013-2020

[41] Data for 44 countries in the Global Health Expenditure Database, 68% of which are in WHO Africa region. See WHO (2013) Global Action Plan for the Prevention of Noncommunicable Disease 2013-2020.

2016 or 10% of global development assistance for NCDs and 0.3% of DAH in 2016.[42] Funding for NCD research and palliative care lags behind that of other NCD areas.[43]

Why should the Scottish Government invest in NCDs in Malawi, Rwanda and Zambia?

26. A summary of core demographic features of each country and basic health indicators is shown in Appendices 2-4 in the country snapshots. All three countries are currently classified as low-income countries (LICs) but each has a vision or plan for reaching LMIC or middle-income status (MIC).[44] Malawi and Rwanda are primarily rural with under one fifth of the population living in urban centres, whilst Zambia has undergone more rapid urbanisation with under half the population in rural areas. **All have significant proportions of the population living in poverty** (Malawi 50.7%, Rwanda 38.3% and Zambia 54.5%).[45]

27. Each of the three countries are relatively politically stable presently. Zambia has just experienced a change in government following a period of turbulence, including reforms to the MoH. These changes have been welcomed by international partners following several corruption challenges**,** mainly with regards to medicines procurement over recent years. In 2013, Malawi experienced corruption related issues in the health sector colloquially known as 'Cash Gate' which led donors to move away from Sector Wide Approaches and budget support. Rwanda has seen relative stability following the 1994 genocide under the leadership of President Kagame.[46]

28. In 2001, African Union Member States pledged to allocated 15% of their annual budget to improve the health sector, called the Abuja Target.[47] **Malawi, Rwanda and Zambia have not met the Abuja target,** with 1.8%, 9.9% and 8.0% allocated to the health budget from the total government expenditure respectively.[48]

29. All three countries receive substantial amounts of external health financing from Government donors, the UN and other partners with **donors contributing to 74% of the health budget in Malawi, 56.8% in Rwanda, and 50% in Zambia** (see Appendices 2-4

[42] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

[43] WHO (2013) Global Action Plan for the Prevention of Noncommunicable Disease 2013-2020

[44] See Republic of Zambia (2006) Vision 2030; Republic of Malawi (2021) MW2063 Vision; and Republic of Rwanda (2020) Vision 2050.

[45] See The World Bank – Poverty headcount ratio at national poverty lines for Rwanda, Malawi, and Zambia; The World Bank – Rural population for Zambia, Malawi, and Rwanda. [all accessed on 23/12/2022]

[46] See The World Bank (2023) Overviews on Malawi, Zambia, and Rwanda. [all accessed on 23/12/2022]

[47] WHO (2010) The Abuja Declaration: Ten years on

[48] See UNICEF (2021) Health Budget Brief: Investing in Children's Health in Rwanda, 2021/22; UNICEF (2021) Health – Malawi Budget Brief; and UNICEF (2022) Zambia Health Budget Brief.

and 9-11).[49] Malawi is the only country that presently has a functioning donor pooled fund supported by the UK, Germany, and Norway, entitled the Health Services Joint Fund (HSJF).[50] In Zambia, corruption led to the dismantling of a Sector Wide Approach for health. According to anecdotal evidence from a KII, this, plus classification of the country as a LMIC in 2011, led donors to move support away from the health sector. Zambia has recently once again been classified as an LIC.

30. Each of **the three countries have well-formed health sector strategies or plans** which Malawi and Zambia are currently updating.[51] NCDs are a priority for each country and indeed each have developed an NCD plan or strategy, although Zambia's, which was developed during the pandemic if SARS Co-V, requires further finalisation.[52]

31. **NCDs** place a significant burden of disease on the health of those living in Malawi, Rwanda and Zambia, **causing 40%, 50% and 35% of mortality in 2019** respectively.[53] Malawi and Zambia have high HIV burdens, and there is strong and growing evidence of the link between HIV, its management and NCDs with comorbidity increasing in importance e.g. antiretrovirals (ARVs) linked to increased CVD risk, diabetes associated with increased risk of TB and pneumonia, and one third of cancer cases associated with infectious diseases.[54] **The most common causes of death from NCDs** across the three countries **are cardiovascular disease, in particular stroke, followed by cancers, especially breast and cervical, digestive disorders and diabetes** (Figures 8 and 9),[55] with incidence increasing with age, and late presentation being more common. Injuries place a substantial burden on the health sector with poor enforcement of speed and seatbelt legislation where this is available.[56] Each of the three countries is experiencing a demographic transition, as described in paragraph 8, meaning that without accelerated action the proportion of people at risk of living with and dying from NCDs is set to increase over the coming 20 years. Poverty remains a significant challenge, with consequent implications for the patterns of NCDs seen beyond the main four NCDs and mental health. Despite this, in 2019, eight per cent of government expenditure for health went towards NCDs (around US$2 per capita) in Malawi, 11% in Zambia (US$7 per capita).

[49] See UNICEF (2021) Health Budget Brief: Investing in Children's Health in Rwanda, 2021/22; UNICEF (2021) Health – Malawi Budget Brief; and Global Financing Facility – Data Portal on Zambia [accessed on 23/12/2022].

[50] Health Services Joint Fund [accessed on 23/12/2022]

[51] See Republic of Malawi (2017) Health Sector Strategic Plan II (2017-2022); Republic of Rwanda (2018) Health Financing Strategic Plan 2018-2024; and Republic of Zambia (2016) National Health Strategic Plan 2017-2021.

[52] See Republic of Rwanda (2020) National Strategy and Costed Action Plan for the Prevention and Control of Non-Communicable Diseases in Rwanda, June 2020 – June 2025; and Republic of Malawi (2017) National Action Plan for the Prevention and Management of Non-Communicable Diseases in Malawi, 2017-2022.

[53] WHO (2022) Noncommunicable Diseases Progress Monitor 2022

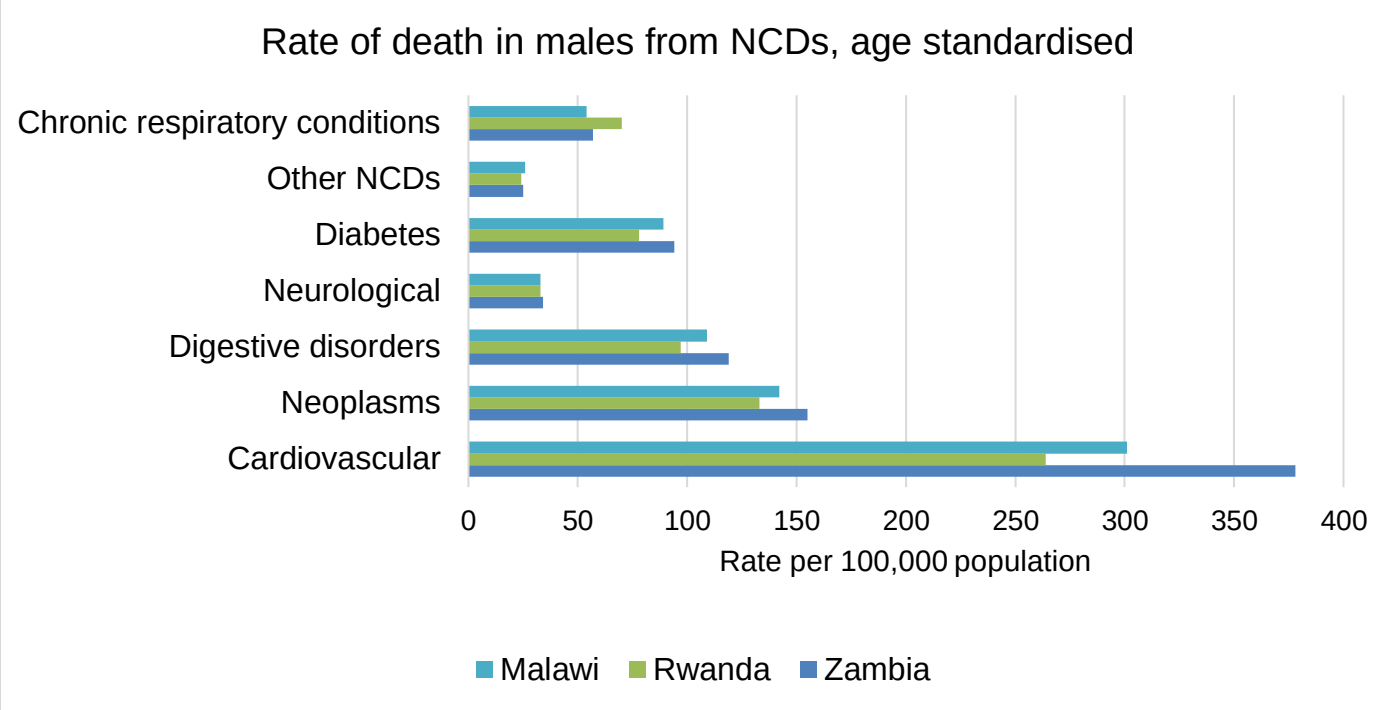
[54] Aidsmap (2011) HIV and non-communicable diseases (NCDs) [accessed on 23/12/2022]; The World Bank – Incidence of HIV in Malawi and Zambia [accessed on 23/12/2022].

[55] Institute for Health Metrics and Evaluation (2019) Global Burden of Disease study results [accessed on 23/12/2022]

[56] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

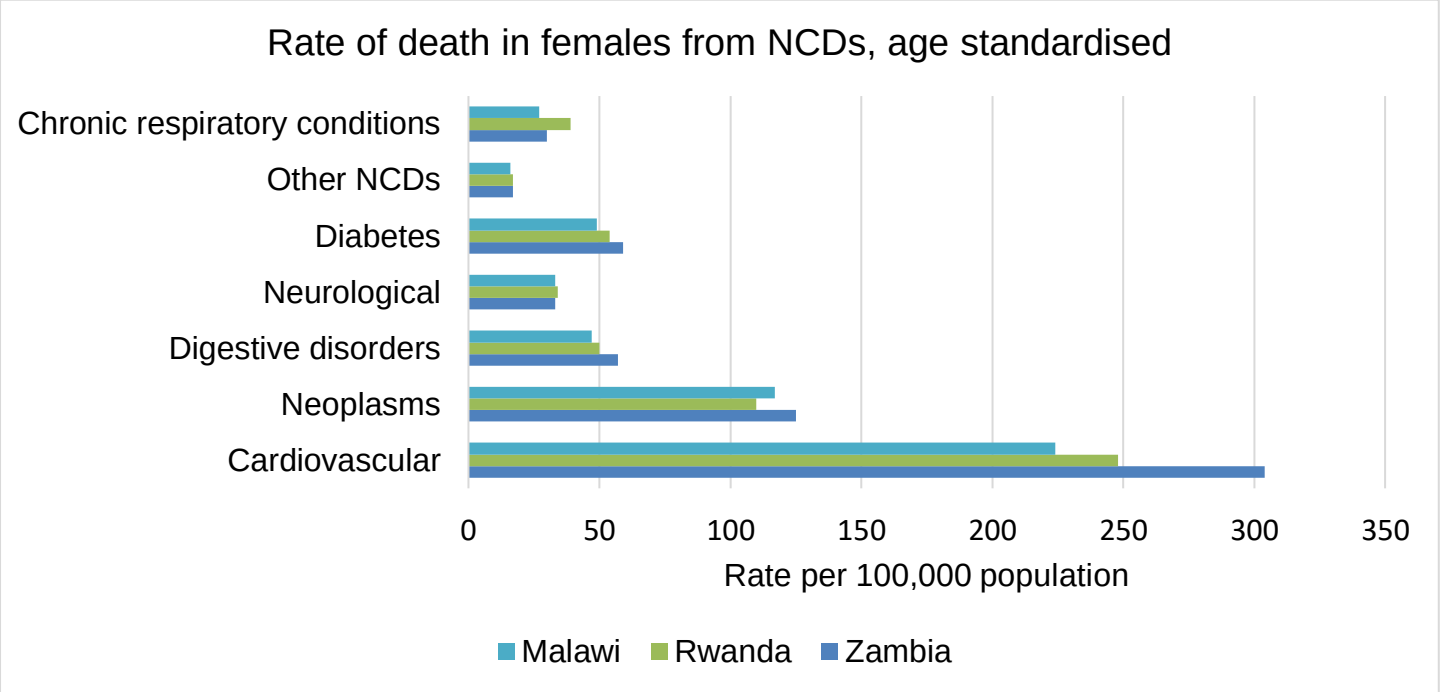
Two and three per cent of the health budget went towards management of injuries in Malawi and Zambia respectively.[57]

Figure 8: Rate of death in males from NCDs, age standardised (in Malawi, Zambia, Rwanda)



Source: Adapted from data from World Bank Data on Malawi, Zambia and Rwanda [accessed on 23/12/2022].

Figure 9: Rate of death in females from NCDs, age standardised (in Malawi, Zambia, Rwanda)



Source: Adapted from data from World Bank Data on Malawi, Zambia and Rwanda [accessed on 29/12/2022].

[57] WHO Global Health Expenditure Database [accessed on 29/12/2022]

"For management of NCDs, PEN Plus is going to be a priority." Individual working within the MoH, Zambia

32. All three countries are making progress against the GAP targets (see Appendices 5-7), predominantly with regard to policy making and some large-scale public health interventions. Progress on improving data collection, developing guidelines and treatment interventions has however lagged.[58] Rwanda and Malawi have prioritised a selection of NCDs including common and at times less severe diseases, such as asthma, hypertensive heart disease and epilepsy, alongside less common, more severe conditions such as type 1 diabetes, advanced rheumatic heart disease and sickle cell disease.[59] At present, a large proportion of care for NCDs is carried out at tertiary level,[60] however, **all three countries have committed to decentralising patient care for NCDs and to use the PEN and PEN Plus models to address these priorities**.[61]

"Rwanda probably the most advanced with NCDs in Africa. They have a really good government and lots of support from funders. Malawi is probably second." INGO worker

33. In terms of roll out of PEN and PEN Plus Rwanda and Malawi have both made significant progress (Figure 10). Rwanda has rolled out PEN across much of the country and is now working to scale up PEN Plus. In Malawi 40 facilities across all districts now offer PEN and international support is helping scale up of PEN Plus. In Zambia, whilst there is a commitment to roll out PEN, implementation of this has been slow, with only one district in the Copperbelt receiving the pilot training. Efforts are currently underway to set up two training sites for PEN Plus, led by a national implementing partner and partnership between a US and Zambian University (anecdotal evidence from KII).[62] As noted earlier, it is hoped that the current focus on PEN Plus will have indirect benefits for the scale up of PEN through provision of training and mentoring for the ongoing routine management of those diagnosed with complex NCDs at health centre level as part of PEN PLUS.[63]

[58] WHO's Noncommunicable Diseases Progress Monitor 2022

[59] Republic of Rwanda (2020) National Strategy and Costed Action Plan for the Prevention and Control of Non-Communicable Diseases in Rwanda, June 2020 – June 2025; and Republic of Malawi (2021) Malawi PEN-Plus Operational Plan

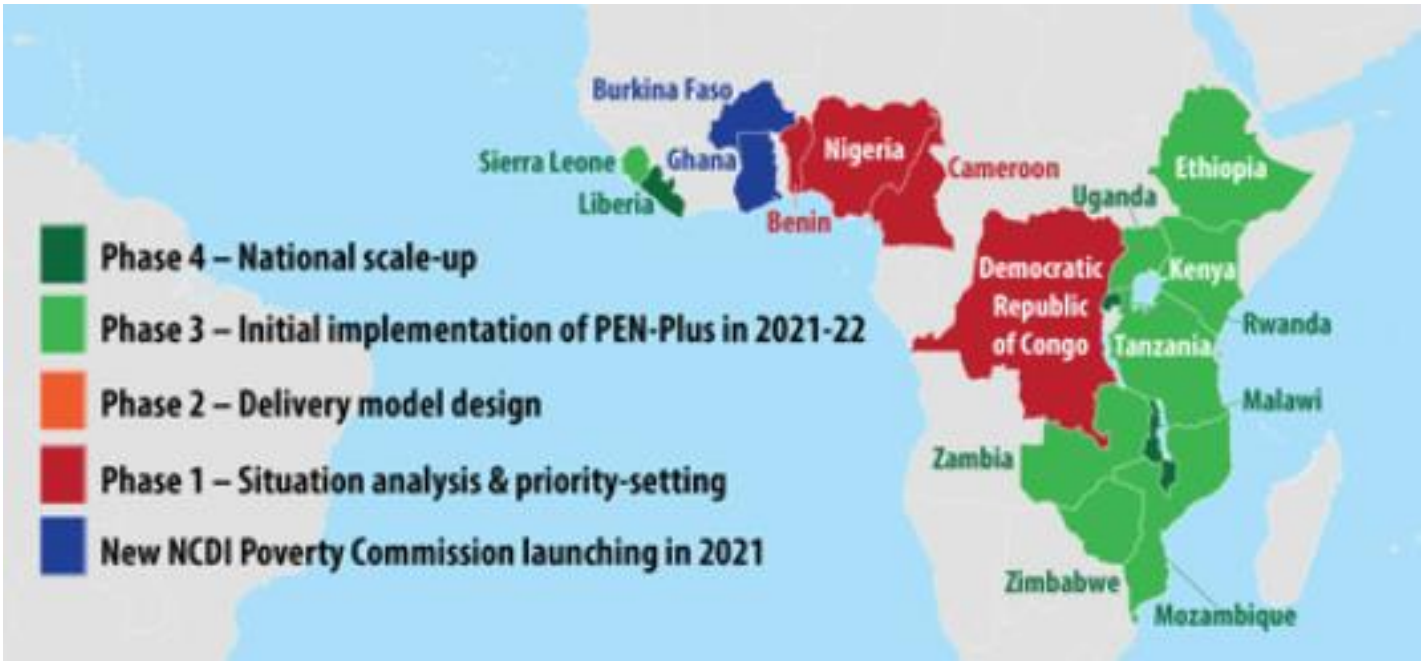
[60] See Republic of Malawi (2017) Health Sector Strategic Plan II (2017-2022); Republic of Rwanda (2018) Health Financing Strategic Plan 2018-2024; and Republic of Zambia (2016) National Health Strategic Plan 2017-2021; and Boudreaux, C. et al (2022) Addressing severe chronic NCDs across Africa: measuring demand for the Package of Essential Non-Communicable Disease Interventions-Plus (PEN-Plus). Health Policy Plan, Volume 12, Issue 4, pp.452-460.

[61] WHO Africa (2022) Pen-Plus – A Regional Strategy to Address Severe Noncommunicable Diseases at First Level Referral Health Facilities

[62] WHO (2010) The Abuja Declaration: Ten years on

[63] WHO (2019) PEN-Plus meeting in Kigali – The management and treatment of non-communicable diseases at primary level strengthened

Figure 10: Progress of PEN-Plus scale up (2021-2022)



Source: NCDI Poverty Network, 2022. Reproduced with permission.

"There is a Zambian tradition that people do not complain about something which is not painful. Anything serious must cause pain or disfigurement." Zambian academic

34. Despite the progress made, coverage remains poor, particularly in Malawi and Zambia. **Lack of access to diagnostics and long-term supply of medications,** including blood pressure monitors and glucose strips act as a barrier to management (Table 1). It was noted by a KI that screening for NCDs only happens as part of antenatal care, or when travelling for a job. Separately another KI noted that checks for NCDs, such as blood pressure monitoring, only happen on demand, and there are many missed opportunities to screen people for NCDs, in part due to lack of awareness of providers. Whilst diagnosis and initial treatment is technically covered by national health insurance schemes, **out of pocket (OOP) payments** are common, also limiting the ability of the poorest to access care.[64] This coupled with **lack of training** and **poor patient data collection** and follow up have challenged role out of PEN and PEN Plus,[65] although efforts have been made to integrate data collection for NCDs into the national systems in Malawi. **Human resources for health are sparce** across all three countries, requiring task shifting and cross specialism, with Malawi having one of the lower ratio of doctors to population in the world.[66]

[64] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

[65] Tripathy, J.P. and Mishra, S. (2021) How effective was implementation of the package of essential non-communicable disease (PEN) interventions: A review of evidence? Diabetes and Metabolic Syndrome, Volume 15, Issue 5.

[66] The World Bank – Physicians per 1,000 people in Malawi [accessed on 29/12/2022]

"OOP expenditure for chronic disease can be so high. We need to think how can we bring the treatment closer to the patients and how can we target these high risk groups." Individual working for the MoH Malawi

Table 1: Availability of equipment, medications and trained staff in Malawian hospitals and health centres

Availability of equipment and medications for trained staff to treat prioritised conditions				
Condition	**Hospitals with availability of**		**Health centres with availability of**	
	Equipment and medications	**Trained staff**	**Equipment and medications**	**Trained staff**
Type 2 diabetes	63%	29%	12%	5%
Cardiovascular disease	17%	34%	1%	10%
Chronic respiratory disease	4%	23%	2%	8%
Rheumatic heart disease	34%		1%	
Type 1 diabetes	42%		2%	

Source: Republic of Malawi (2021) Malawi PEN Plus Operation Plan. Reproduced with permission.

35. **International support for NCDs in the three countries is limited** (see Appendices 9-11). Stakeholder mapping shows external stakeholder priorities for development assistance for health. Many partners interested in NCDs are outside traditional government donor partners, often supporting disease specific areas or piloting of approaches. Whilst many donors are supportive of efforts to attain Universal Health Care (UHC), there is a risk that unless explicit attention is given to NCDs within this agenda, targets will not be met.

36. Support for palliative care was noted to be even more limited than for diagnosis and management of NCDs as a whole. Each of the three countries have central cancer referral centres that in addition to diagnosis and some treatment of common cancers, also provide some palliative care to those terminal from cancer related diagnoses, however, availability of opiates and other palliative care medicines remain a challenge. According to interviews, support for palliative care at decentralised levels is scant, including for those terminal from NCDs such as end stage renal failure, or respiratory failure from chronic heart disease. Previously palliative care was provided at community level for HIV, with funding from PEPFAR providing support until the early 2000s. With the scale up of treatments for HIV and improved survival funding was redirected towards

treatment and palliative care support ceased. KIIs from each of the three countries recalled the strength of these programmes with specific requests from Rwanda to SG to support set up of community models to deliver palliative care.

37. In addition to donors providing development finance, there are a range of civil society or patient advocacy groups, with varying degrees of success. The NCD Alliance works internationally to raise awareness of NCDs through work with its federation associations. These are functional to varying extents in the three countries, with the most organised in Rwanda and Malawi. In Zambia, lack of funding led to cessation of activities by the NCD Alliance lead in country, but recently efforts have been made to reawaken the group.

What is the link between NCDs and gender?

38. This section considers how gender interacts with NCDs across SSA, focusing on differences in burden of disease, risk and access to care. The section also shows how the report considered gender in terms of those interviewed in order to avoid bias.

39. Whilst commonly assumed that NCDs predominantly affect men, the situation is more nuanced and two of every three deaths in women are a consequence of a NCD.[67] Figure 3 (see p.16) shows how gender affects morbidity from NCDs at global, and regional level across SSA. It demonstrates that at an aggregate level the burden of NCDs is higher in men than women and that this is largely driven by cardiovascular disease, the most common cause of morbidity and mortality. When you look beyond aggregate data differences start to be seen for example in SSA women experience a greater burden of disease from neoplasms (cervical and breast cancer) with more than 65% of all cancer cases in 2017 in SSA affecting women.[68]

40. Further differences become apparent when we analyse age and sex disaggregated data as per Figure 4 (see p.18). Here again the role of cardiovascular disease in driving disease burden across both sexes in adults over 40 years of age can be seen particularly in men. Mental health disorders are important at younger age groups, and neoplasms account for a higher proportion of disease, particularly for women from the age of 35 onwards.[69] Digestive disorders appear to have a greater impact in men, as can be seen in Figure 8 and 9.[70] Chronic respiratory diseases cause the third largest burden of disease across SSA and affected over 70 million people in 2017, more than half of those affected were women.[71] A recent systematic review found that women with chronic obstructive pulmonary disease were younger, smoked less, had a lower body mass index, and were

[67] NCD Alliance – Women and NCDs [accessed on 27/3/2023]

[68] Gouda, H.B. et al (2019) Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study 2017. The Lancet Global Health. Volume 7, Issue 10, E1375-E1387.

[69] Ibid.

[70] Institute for Health Metrics and Evaluation (2019) Global Burden of Disease study results

[71] Riha, J. (2020) Women and Noncommunicable Diseases in Africa: Mapping the scale, actors, and extent of rights-based work to address the impact of NCDs on African women. Ghana: African Women's Development Fund.

more likely to be of lower socioeconomic status than their male counterparts which shows the importance of nuance when exploring the gender dynamics of NCDs in SSA.[72] The data show a similar pattern when we explore the burden from NCDs for the three partner countries.

41. Although behavioural risk factors affect both sexes, it is commonly reported that women can be exposed to risk factors disproportionally due to lower levels of education and lower exercise levels due to gender and social norms, especially those who are from lower socio-economic status. Across the three partner countries, more men (20%) than women (8%) smoke and men are more likely to drink alcohol (see Appendices 2-4).[73] In Malawi, the proportion of women that are overweight (27.4%) is much higher when compared with men (9.4%).[74] This disparity is noted when considering proportion of the population not meeting the WHO recommendations for physical activity for health, with twice as many women than men not engaging in sufficient physical activity (men 0.9%: women 1.8%). This was mirrored in Zambia with 10% of the population not engaging in sufficient physical activity, with the gender disparity greatest when considering vigorous activity, with 45.5% of women reporting no vigorous activity at all, compared to 23.9% of men.[75] Salt intake, which is an important risk factor for cardiovascular disease, was higher in men than women in Zambia however consumption of vegetables was similar across both sexes.[76] They are also more likely to be exposed to indoor air pollution which also has a disproportionate impact on children and those living in rural areas.[77]

42. Biological risk factors for cardiovascular disease or chronic kidney disease include hypertension, high glucose levels and high cholesterol. In Malawi, screening for hypertension was substantially higher in women with 81.7% of men never being screened for blood pressure, compared to 49.9% of women. A similar picture was seen in Zambia, where two thirds of men had never been screened, compared to one third of women, and in Rwanda where more than twice as many women as men had ever had their blood pressure measured, with 29.9% of women screened compared to 11.8% of men. Correspondingly, in Malawi, more women than men had been diagnosed with hypertension in the last 12 months but in Rwanda, men were found to be more likely to

[72] Riha, J. (2020) Women and Noncommunicable Diseases in Africa: Mapping the scale, actors, and extent of rights-based work to address the impact of NCDs on African women. Ghana: African Women's Development Fund.

[73] See: Republic of Malawi Ministry of Health (2017) National Action Plan for the Prevention and Management of Non-Communicable Diseases in Malawi, 2017-2022; Republic of Rwanda (2015) Rwanda Non-communicable Diseases Risk Factors Report; Republic of Zambia (2017) Zambia Steps Survey for Non-Communicable Diseases Report

[74] Republic of Malawi (2017) Malawi National STEPwise Survey for Non-Communicable Diseases Risk Factors 2017 Report

[75] Ibid.; Republic of Zambia (2017) Zambia Steps Survey for Non-Communicable Diseases Report

[76] Republic of Malawi (2017) Malawi National STEPwise Survey for Non-Communicable Diseases Risk Factors 2017 Report

[77] Riha, J. (2020) Women and Noncommunicable Diseases in Africa: Mapping the scale, actors, and extent of rights-based work to address the impact of NCDs on African women. Ghana: African Women's Development Fund.

have hypertension, and for this to come on at a younger age.[78] In Zambia, there were marked differences in the proportion of men and women on treatment in those diagnosed with 23% of women with diagnosed hypertension on treatment compared to 9% of men. This was also the case when you look at control of hypertension with 11.4% of women well controlled compared to 2.5% of men.[79] 99.8% of respondents to the Malawi STEPS survey had never been tested for cholesterol, but of those tested women had a higher mean cholesterol level than men. Blood glucose was similarly found to be marginally higher in women than men. In Rwanda, women were found to be slightly more likely to have high cholesterol, but there was found to be no difference between men and women when glucose level or evidence of kidney disease were reviewed.[80]

43. It is well documented that women face barriers to accessing care for example, prioritization of other family members for healthcare, high travel times and costs to access clinics, limited financial decision making and stigma related to gender specific illnesses, such as cervical and breast cancer.[81] Despite these documented barriers to accessing care, both anecdotally from the KIIs, and from reviewing the three STEPS surveys from the partner countries women appear to access NCD screening and treatment more effectively, for example, with more women on effective treatment for hypertension.[82] Two small studies, from Zimbabwe and Uganda both show women are more likely to approach traditional healers than men for their diabetic care and that women were engaged in their follow up care. One of the studies also showed that women are more likely to approach free government facilities whereas men would attend private for-profit clinics.[83] Within mental health, one study in Rwanda showed poor health seeking behaviours in men were more pronounced than in women.[84] There is however very little data for health seeking behaviour for NCDs in SSA.

44. Whilst conducting this study, the consultants were mindful to ensure data, opinions and expertise were gained from both sexes. Of the 48 KIs that were interviewed, 29 were female. They included women in government positions, working within donor agencies and as directors, vice-presidents and programme leads in international and national NGOs.

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[78] Republic of Rwanda (2015) Rwanda Non-communicable Diseases Risk Factors Report; and Republic of Malawi (2017) Malawi National STEPwise Survey for Non-Communicable Diseases Risk Factors 2017 Report

[79] Republic of Zambia (2017) Zambia Steps Survey for Non-Communicable Diseases Report

[80] Republic of Rwanda (2015) Rwanda Non-communicable Diseases Risk Factors Report

[81] Riha, J. (2020) Women and Noncommunicable Diseases in Africa: Mapping the scale, actors, and extent of rights-based work to address the impact of NCDs on African women. Ghana: African Women's Development Fund.

[82] Republic of Zambia (2017) Zambia Steps Survey for Non-Communicable Diseases Report

[83] Hjelm, K. and Atwine, F. (2011) Health-care seeking behaviour among persons with diabetes in Uganda: an interview study. BMC International Health and Human Rights, Volume 11, Article number 11; and Mufunda, E., Albin, B. and Hjelm, K. (2012) Differences in Health and Illness Beliefs in Zimbabwean Mena and Women with Diabetes. The Open Nursing Journal, Volume 6, pp.117-125.

[84] Umubyeyi, A. et al (2015) Help-seeking behaviours, barriers to care and self-efficacy for seeking mental health care: a population-based study in Rwanda. Social Psychiatry and Psychiatric Epidemiology, Volume 51, Issue 1, pp.81-92.

Appraisal Case - Part 1

What impact and outcome do we hope to achieve through SG investment in NCDs in the three partner countries?

45. The SG plan to continue to invest in health in Malawi, Rwanda and Zambia, with a specific focus on the prevention and treatment of NCDs. The expected impact of the three-year programme will be increased financial and political engagement and commitment on the prevention, diagnosis of NCDs and increased access to locally led NCD quality care in Malawi, Rwanda and Zambia.

46. The outcomes of the programme will be;

    a. Raised profile of NCDs as part of the UHC agenda.
    b. Increased access to NCD care at district level.
    c. Increased evidence on how NCDs can be integrated into existing UHC funding mechanisms.
    d. Increased evidence on affordable, scalable options for NCD management in LICs.
    e. Increased proportion of health care workers (HCW) able to diagnose and manage NCDs at district level.
    f. Improved access to quality community based palliative care.

47. Specific programme targets will be agreed with partners on agreement and approval of the approach.

What are the feasible options that address the need set out in the Strategic Case?

48. For the purpose of this report three options have been considered.

    Option 1: Do nothing. Stop health sector support to the three countries.

    Option 2: Continue existing programming.

    Option 3: Provide comprehensive support for NCDs at global, regional and national level, and form and participate in peer-to-peer collaborations between Scotland and the three partner countries.

Description of the options

Option 1: No SG support to the health sector in the three countries

49. This option assumes that SG will end direct support for the health sector in Malawi, Rwanda, and Zambia. This assumes that the longstanding relationships built between SG and the three partner countries will come to an end. SG development assistance is in addition to that given by the UK Government and forms an important part of SGs strategy on foreign policy and international affairs. It is likely if SG were to stop investing in health this would have broader implications for Scotland's development objectives. In terms of NCDs, given there is currently limited support to NCDs in the three countries this will not have implications for the broader NCD agenda however Scotland's relationship with the three countries, and in particular Malawi will likely be affected. Such an approach has a risk of significant reputational damage for Scotland with potential implications on how Scotland is viewed internationally. Given the risks of this approach it is not considered further.

Option 2: Continue with the existing SG programme and halt plans for more strategic engagement on NCDs

50. This assumes that SG continues the existing programme and ceases design efforts. SG have expressed a desire for a more strategic approach to development health spend that shares Scotland's expertise with partner countries focusing on a narrower range of programmes, partners and topic areas. At present SG manages over 50 development contracts (7 in health, and 16 indirectly supporting health) ranging from support of a dental school, to individual support to NGOs to deliver school meals, community ear and hearing care and programmes to improve maternal and child health.[85] SG has specific interests in decolonisation and gender mainstreaming of investments, which will be much harder to achieve if the portfolio continues in its current exact form.[86] In addition, SG's current portfolio of investments in health are wide ranging in focus and approach and are often external to government or national budgetary processes. Whilst all add value, potential impact is likely to be limited and are unable to leverage impacts potentially available through partnership and collaborative working.[87] Given the commission specifically asked for a new strategic approach to investing in health in the three countries and the limitations of the current approach in terms of impact, leverage and management this option has been discounted from further analysis.

[85] The Scottish Government (2020) Zambia Development Programme 2017-2022: Grant Awards and The Scottish Government (2018) International Development Fund: Malawi projects 2018-2023

[86] The Scottish Government (2022) International Development – 2023 programming

[87] Introductory Meeting with hon. Minister Nancy Tembo, Malawi Minister of Foreign Affairs. London; 2022 Jun.

Option 3: Set of support around NCDs with the aim of stimulating action at global, regional and national level

51. This uses SG's political influence and position as a leader in NCDs to increase momentum towards the UN SDG goals on UHC by building partnerships at global level, both political and technical, supporting regional initiatives and targeting support at national level to scale up and roll out WHOs Regional strategy for NCDs or PEN Plus. The individual components of this approach would be:

(a) Forge political alliances with like-minded countries to raise global awareness of NCDs linking to the UHC agenda. Given the paucity of international donor investment and engagement in NCDs, there is an opportunity to work with other like-minded governments and donors to raise the profile of NCDs globally and particularly within LMICs. Potential partners to consider include those who have expressed interest in NCDs. A partnership around NCDs would raise the profile of NCDs politically including Scotland's role in development but also have the potential to leverage additional financial resources. Potential inputs might include:

i. Work with key partners to identify opportunities to help foster dialogue around the Global NCD agenda. This might include advocacy to raise awareness of the importance of NCDs; high level dialogue or an MoU for collaboration between Scotland and like-minded partners; support for high level panels to disseminate and interrogate best practice and integration of NCDs into the UHC agenda.
ii. Joint financing of global initiatives such as the Multi-partner Trust Fund (MPTF) led by WHO.
iii. Work with partners to identify opportunities to disseminate learning on NCDs in LMICs. This may include supporting high level panels, or the organisation of conferences on NCDs as part of the roadmap towards the UN High level meeting on NCDs.
iv. Support to regional partners including potentially WHO Afro or Africa CDC as is relevant.

(b) Support the scale up of PEN PLUS in Malawi and Zambia. PEN Plus is an integrated care delivery strategy that focuses on improving access of the poorest to quality chronic care services in rural areas of LMICs. PEN Plus was adopted by Member States of the WHO African Region as the regional strategy for improving access to decentralised care for NCDs in particular Type 1 Diabetes Mellitus, Sickle Cell Disease and Rheumatic Heart Failure.[88] Treatment for these conditions is traditionally only available in tertiary level hospitals, however the barriers to accessing care by the poorest are well documented. By scaling up access to diagnosis and treatment of these relatively complex diseases that would inevitably lead to premature death and disability life expectancy for some of the poorest

[88] The NCDI Poverty Network – PEN-Plus; WHO Africa (2022) Pen-Plus – A Regional Strategy to Address Severe Noncommunicable Diseases at First Level Referral Health Facilities

people will inevitably increase.[89] PEN Plus bridges the gap between training, mentoring and referral for NCDs. PEN PLUS complements the WHO PEN which aims to address less severe NCDs in health centre level, by building up capacity of nurses in district hospitals to mentor and train health centre staff providing the longer term follow up and care of NCD patients with a range of conditions.[90] Inputs include:

i. **Funding the set-up of two additional PEN Plus training centres in Zambia and support to increase NCD capacity at the MoH.** At present partners are working with the MoH to set up two training centres, one in Lusaka and one in the rural outskirts of the city. Two additional training centres would allow a substantial scale up in the number of HCWs trained in delivering PEN Plus, thus improving access for the poorest to services. It would accelerate ambitions in terms of dissemination of capacities to rural and harder to reach areas. In addition, support for a secondment to the Zambian MoH NCD department would build capacity of the MoH to prioritise NCD care and PEN Plus, helping to accelerate progress as per the Zambian National Health Strategic Plan 2017 They could also provide a link and feedback to the SG.

ii. **Funding the delivery of PEN Plus in Malawi through support for the HSJF.** The fund was established by the UK as a managed joint fund able to provide parallel financing for the Government of Malawi priorities without using their systems. Partners channel funding through it to support the Health Sector Strategic Plan of the MoH. It is the main vehicle for coordinating donor investments in the health sector in Malawi and current expenditure is around US$16m per year. The largest donor has been Norway (55%) to date followed by the UK (35%), and KFW (Germany) (7.5%). Funds are channelled through commercial bank accounts co-signed by an international Fiscal Agent with payments made directly to vendors and suppliers. Payment is in arrears on delivery of services. Procurement is via the Government of Malawi's procurement systems but are co-approved by a contracted International Procurement Oversight Agent representing the donor partners. Overheads are shared amongst partners equally however discussions are ongoing to adjust this to reflect proportionality of investment. Governance and management arrangements are rotated amongst the partners however these are flexible and informally agreed by each of the partners. This would allow concession to be given to Scotland given its lack of country presence. At present the primary focus is on health systems and maternal and child health but discussion with donor colleagues participating in the HSJF suggest interest and willing to allow SG to use the mechanism to support finance for NCDs. By leveraging the platform, a small amount of funding has the potential to enable much wider reach than setting up a separate funding mechanism specifically to enable access to NCD services. It is

[89] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

[90] The NCDI Poverty Network – PEN-Plus

also the specific request of the MoH that donors provide support through this mechanism to reduce fragmentation and to benefit from capital gains.

(c) Development of a quality community palliative care model pilot in Rwanda. Rwanda is further advanced in its implementation of PEN and PEN Plus. The MoH have asked for support for palliative care specifically. One area discussed was home based palliative care. This option would look at ways of integrating home based palliative care into the Pen and PEN Plus model as a potential pilot, building the evidence base on this approach to delivery of palliative care for those living with cancer, but also with chronic diseases that are not amenable to treatment, for example, advanced chronic kidney disease, or advanced chronic heart failure. If this model of delivery is shown to work well, research findings could potentially be used to share learning across the region on integration of community or home based palliative care into PEN and PEN Plus.

(d) Peer-to-Peer collaboration. Workshops and individual discussions with SG colleagues has flagged the interest in peer-to-peer learning and shared collaboration. This component provides two specific options for peer-to-peer learning that would operate in complement to already agreed plans around support for peer to peer learning.

i. **International Association for National Public Health Institutes (IANPHI):** IANPHI links and strengthens government agencies responsible for public health by leveraging the experience and expertise of its member institutes to build and improve national public health systems. At present it has 115 members in 98 countries. Public Health Scotland could join the network[91]. Examples of support that have been given by countries include use of specialist registrars to support Africa CDC with development of their strategy for NCDs. Additional support could be given to national public health institutes in the three countries potentially working in partner with other national public health institutes with a specific interest in NCDs.

ii. **Support development of a regional/ national palliative care curriculum and cadre of palliative care professionals.** This would involve working with colleagues from Makerere University in Uganda, Hospice Africa and linked organisations in Scotland including the University of Edinburgh etc. There are ongoing discussions about developing a programme in Rwanda, potentially with support from the Economic and Social Council (ECOSOC) of the UN through collaboration with the International Association for Hospice and Palliative Care. This might offer the opportunity to work in palliative care across the three countries, potentially linking to the development and pilot of a home-based palliative care model as above in Rwanda. It may also be possible to leverage the capacities of the NHS.

52. **The proposed option benefits from the global evidence base**, in particular learning through implementation of the WHO Best Buys, PEN, PEN Plus and the proposed integrated care model from the non-communicable diseases and injuries (NCDI) Poverty Commission. Figures 11-13 compare the interventions proposed in WHO Best Buys as

[91] Please note Public Health Scotland is already part of the network.

part of the GAP with those proposed by the NCDI Poverty Commission as part of an integrated care model against the different components of the SG programme. The proposed option takes an approach more aligned to that of the NCDI Poverty Commission, supporting strengthening of the health system at district level, with a focus on diagnosis and treatment of more complex NCDs that have a disproportionate impact on the poorest. The figure also shows assumed indirect effects from the SG programme particularly by strengthening training and mentorship arrangements between district hospitals and health centres and the communities they serve. In addition, the proposed programme includes a component of increasing access to palliative care at district and community level in Rwanda.

53. **The proposed option has also been audited against principles developed by the World Bank in their overview of the challenge of NCDs for SSA.** Three additional principles (peer-to-peer, decolonisation and gender mainstreaming) were added from analysis of KIIs and workshops with SG colleagues.

54. Table 5 (see p.46 onwards) shows that **the proposed option maps well against the audited principles**. The areas where gaps emerge are specifically around comprehensive prevention given the focus on PEN PLUS however it is assumed that efforts to build capacity at district hospital level in terms of diagnosis and management of complex NCDs will build capacity for long term management of stable patients with NCDs in the medium term. The other areas where there are potential gaps are around multisectoral responses to NCDs such as working on nutrition, healthy cities, or air pollution etc. Some of these areas are already covered in national plans and strategies, or through work by WHO, so indirectly SG support for these institutions will support this. In addition, other SG work is ongoing that may well contribute to the social determinants that impact upon risk of NCDs.

Figure 11: Interventions prioritised by National NCDI Poverty Commission

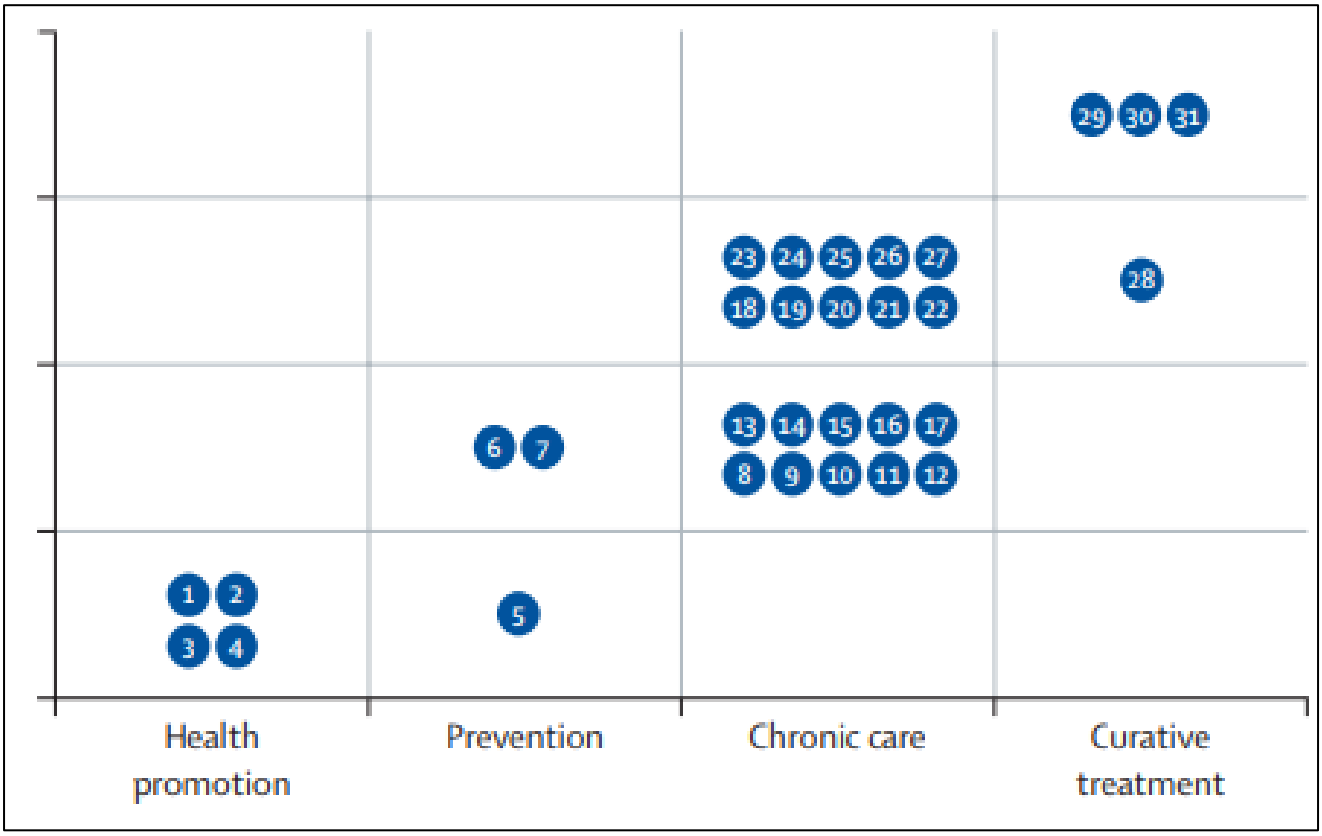


Figure 12: Interventions prioritised by the Global Action Plan Best Buys

Source for Figures 11 and 12: Bukhman G. et al (2020) [Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion](). Lancet. 3;396(10256):991-1044. Permission to reproduce content secured via RightsLink.

Figure 13: Interventions proposed for the SG

Referral hospital				
First level (district) hospital			**32** (Malawi direct impact) **32** (Zambia direct impact)	**32** (Malawi direct impact) **32** (Zambia direct impact)
Health centre	**32** (Malawi indirect impact) **32** (Zambia indirect impact)	**32** (Malawi indirect impact) **32** (Zambia indirect impact)	**32** (Malawi indirect impact) **32** (Zambia indirect impact) **34** (Rwanda direct impact)	**32** (Malawi indirect impact) **32** (Zambia indirect impact)
Community	**32** (Malawi indirect impact) **32** (Zambia indirect impact)	**32** (Malawi indirect impact) **32** (Zambia indirect impact)	**33** (Rwanda direct impact) **33** (Malawi indirect impact) Zambia (indirect impact) **34** (Rwanda direct impact)	
	Health promotion	**Prevention**	**Chronic care**	**Curative treatment**

Source: Adapted from Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044. and WHO (2017) Tackling NCDs: 'best buys' and other recommended interventions for the prevention and control of noncommunicable diseases

Table 2: Key for Figure 11[92]

Number	Intervention
1	Mass media messages concerning healthy eating or physical activity
2	Mass media messages concerning use of tobacco and alcohol
3	Mass media for awareness on handwashing and household air pollution health effects
4	Education campaigns for the prevention of gender-based violence
5	School-based HPV vaccination for girls
6	Opportunistic screening for cervical cancer using visual inspection or HPV DNA testing and treatment of precancerous lesions with cryotherapy
7	Treatment of acute pharyngitis in children to prevent rheumatic fever
8	Low-dose inhaled corticosteroids and bronchodilators for asthma and for selected patients with COPD
9	Screening and management of diabetes among adults at risk, including glycaemic control, management of blood pressure and lipids, and consistent foot care
10	Prevention of long-term complications of diabetes through blood pressure, lipid, and glucose management as well as consistent foot care
11	Screening and management of diabetes in pregnancy (gestational diabetes or pre-existing type 2 diabetes)

[92] *Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044*

Number	Intervention
12	Basic palliative care
13	Long-term management of ischaemic heart disease, stroke, and peripheral vascular disease with aspirin, beta blockers, ACEi, and statins (as indicated) to reduce risk of further events
14	Opportunistic screening for hypertension for all adults and initiation of treatment among individuals with severe hypertension or multiple risk factors
15	Screening and management of hypertensive disorders in pregnancy
16	Management of depression and anxiety disorders with psychological and generic antidepressant therapy
17	Management of epilepsy, including acute stabilisation and long-term management with generic anti-epileptics
18	Management of acute exacerbations of asthma and COPD using systemic steroids, inhaled beta-agonists, and, if indicated, oral antibiotics and oxygen therapy
19	Basic palliative care
20	Secondary prophylaxis with penicillin for rheumatic fever or established rheumatic heart disease
21	Medical management of acute heart failure
22	Medical management of heart failure with diuretics, beta blockers, ACEi, and mineralocorticoid antagonists
23	Provision of aspirin for all cases of suspected myocardial infarction
24	Management of schizophrenia using generic anti-psychotic medications and psychosocial treatment
25	In settings where sickle cell disease is a public health concern, universal newborn screening followed by standard prophylaxis against bacterial infections and malaria

Number	Intervention
26	Detect early-stage breast cancer using clinical examination and refer for treatment
27	Early detection and treatment of early-stage cervical cancer
28	Basic first-level hospital surgical services
29	Treat early-stage breast cancer with appropriate multimodal approaches, including generic chemotherapy, with curative intent, for cases that are referred from health centres and first-level hospitals following detection using clinical examination
30	Treat selected early-stage childhood cancers with curative intent in paediatric cancer units or hospitals
31	Specialised surgical services

Table 3: Key for Figure 12[93]

Number	Intervention
1	Increase excise taxes and prices on tobacco products
2	Enact and enforce comprehensive bans on tobacco advertising, promotion, and sponsorship
3	Implement plain or standard packaging and large graphic health warnings on all tobacco packages
4	Eliminate exposure to second-hand smoke

[93] *Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044*

Number	Intervention
5	Implement effective mass media campaigns that educate the public about the harms of smoking or tobacco use and second hand smoke
6	Increase excise taxes on alcoholic beverages
7	Enact and enforce bans or comprehensive restrictions on exposure to alcohol advertising
8	Enact and enforce restrictions on the physical availability of retailed alcohol
9	Reduce salt intake through reformulation of food products to contain less salt
10	Reduce salt intake through establishment of a supportive environment in public institutions
11	Reduce salt intake through behaviour change communication and mass media campaign
12	Reduce salt intake through implementation of front-of-pack labelling
13	Implement community-wide public education and awareness campaign for physical activity
14	Vaccination against HPV
15	Prevention of cervical cancer through screening and treatment
16	Drug therapy and counselling to individuals who have had a heart attack or stroke or who are at high risk of a fatal or non-fatal cardiovascular event in the next 10 years

Table 4: Key for Figure 13

Number	Intervention
32	Support the scale up of PEN-Plus in Malawi and Zambia
33	Development of quality community palliative care model pilot in Rwanda
34	Peer-to-peer collaboration

Table 5: Audit of proposed SG programme against World Bank and SG principles for NCD investment[94]

Principle	Principle definition	Forge political alliances linking NCDs to UHC	Support the scale up of PEN PLUS in Malawi	Support the scale up of PEN PLUS in Zambia	Pilot community palliative care, Rwanda	P2P IANPHI	P2P palliative care training
Multisectoral response	Mobilize a multisectoral response to build support and capacity	X			X	X	
Partnership and Ownership	Establish effective partnerships and promote civil society engagement, broad participation, and ownership	X	X	X	X	X	X
Evidence based	Select cost-effective and evidence-based approaches, and use and build an evidence base, with investment in research		X	X			
Stepwise and prioritise	Implement priority interventions according to potential for health gains, local considerations, and need		X	X	X	X	X

[94] *Marquez, P.V.; Farrington, J.L. (2013) The challenge of non-communicable diseases and road traffic injuries in Sub-Saharan Africa: an overview. Washington, D.C. : World Bank Group.*

Principle	Principle definition	Forge political alliances linking NCDs to UHC	Support the scale up of PEN PLUS in Malawi	Support the scale up of PEN PLUS in Zambia	Pilot community palliative care, Rwanda	P2P IANPHI	P2P palliative care training
Integration	Take account of common risk factors, determinants, and care models across diseases, and promote integration where it adds value and/or saves costs	X	X	X	X		
Comprehensive prevention	Balance a combination of population-level primary prevention and individual health care strategies		X	X			
Life Course	Promote prevention throughout life, beginning in early life and continuing with interventions for adults and the elderly	X	X	X	X	X	X
Health system strengthening	Reorient and strengthen health systems, in particular primary health care, striving for universal coverage and fairness in resource allocation	X	X	X	X		

Principle	Principle definition	Forge political alliances linking NCDs to UHC	Support the scale up of PEN PLUS in Malawi	Support the scale up of PEN PLUS in Zambia	Pilot community palliative care, Rwanda	P2P IANPHI	P2P palliative care training
Enabling and empowering	Enable and empower people with NCD and their families to manage their conditions better		X	X	X		
Equity	Promote equity, taking account of social and environmental determinants	X	X	X	X	X	X
Evaluation and accountability	Strengthen surveillance, monitoring, evaluation, and information-sharing to increase accountability and target effort and resources more effectively		X	X	X		
Development	Integrate with national programs for sustainable development, and ensure consistency with national health policy and existing programs	X	X	X	X	X	X
Peer to Peer	Mutual learning and training strategy that involves participants of		X	X		X	X

Principle	Principle definition	Forge political alliances linking NCDs to UHC	Support the scale up of PEN PLUS in Malawi	Support the scale up of PEN PLUS in Zambia	Pilot community palliative care, Rwanda	P2P IANPHI	P2P palliative care training
	the same level engaging in collaborative learning.						
Decolonisation	Take a decolonised/BLM lens on investments, supporting shift power South		X	X	X		X
Gender Mainstreaming	Putting the rights and empowerment of women and girls and other marginalised groups at its heart, in a manner that has a practical impact.	X	X	X	X		

Assessing the strength of the evidence base for each feasible option

55. The evidence base on investing in NCDs is LMICs is small but growing. Table 7 outlines the main assumptions explored as part of the report and the source and quality of evidence found that supports these areas. This section does not provide a detailed overview of the evidence, as this has been incorporated into the formation of the report. The definition of quality of evidence is explained in Table 6.

Table 6: Definition of levels of evidence

Certainty	What it means
Very low	The true effect is probably markedly different from the estimated effect
Low	The true effect might be markedly different from the estimated effect
Moderate	The authors believe that the true effect is probably close to the estimated effect
High	The authors have a lot of confidence that the true effect is similar to the estimated effect

Theory of change

56. The programme seeks to increase global, and national attention to NCDs by working with partners to leverage finance and capacities in support of the NCD agenda at country level. The focus will be on engaging international partners and raising awareness in advance of the UN High Level meeting on NCDs. In addition, it will support the scale up of PEN Plus in Malawi and Zambia by focusing on training of health workers or making available services using existing platforms to build upon thus maximising scope and scale of the interventions. In Rwanda, priority will be given to exploring opportunities to integrate community palliative care on the backbone of an existing PEN Plus network and on creating training programmes for palliative care for the country and region under the leadership of the MoH. Peer-to-peer support will form a major component of the work, whether public health capacity and links or using specific NCD related clinical capacities and linkages via the Royal Colleges as appropriate. The programme builds upon lessons

learned through existing policies and programmes such as the GAP, and programmes run by MoH and partners in the three countries. This can be seen in Table 7.

57. The Theory of Change (ToC) has several implicit assumptions built in (see Figure 14):

a. That UHC will not be achieved without increased action on NCDs. Given the existing and future burden of NCDs, it is unlikely that targets on UHC will be met without accelerated focus on NCDs.
b. That countries are keen to partner with Scotland on this important agenda and that the global system will be able to absorb the agenda into current health security focused frameworks. COVID-19 showed the importance of tackling NCDs, given the heightened risk of COVID-19 for those suffering from an NCD but also increased risk of developing an NCD following infection. In addition, services for those with NCDs collapsed as a consequence of the focus given to COVID during the pandemic.
c. That SG has the capacity to engage with global partners on the issue of NCDs.
d. That SG has the capacity to engage with country partners in the design and implementation of the programme despite an absence of country presence (this might include discussions around budget support in Rwanda).
e. That SG stakeholders will be comfortable with a shift in approach away from a programme explicitly designed around women and children, to one that is more heterogenous in the population it supports but that includes children and the poorest more broadly.
f. That partners at country level including those involved in the HSJF are willing for its remit to be expanded to include a focus on NCDs and that this leads to expanded access to services for NCDs.
g. There are sufficient health workers, infrastructure and commodities to allow training on PEN Plus to be rolled out in Zambia.
h. There are sufficient health workers, infrastructure and commodities to allow roll out of PEN Plus as part of the HSJF in Malawi.
i. That the MoH and partners can design and roll out a pilot on palliative care as part of PEN Plus.
j. That Scottish partners can provide capacity to enable robust peer-to-peer networks to be formed and tailored in a way appropriate to the country contexts.
k. That scale up of PEN Plus will lead to scale up of PEN.

Table 7: Strength of evidence for strategies / interventions

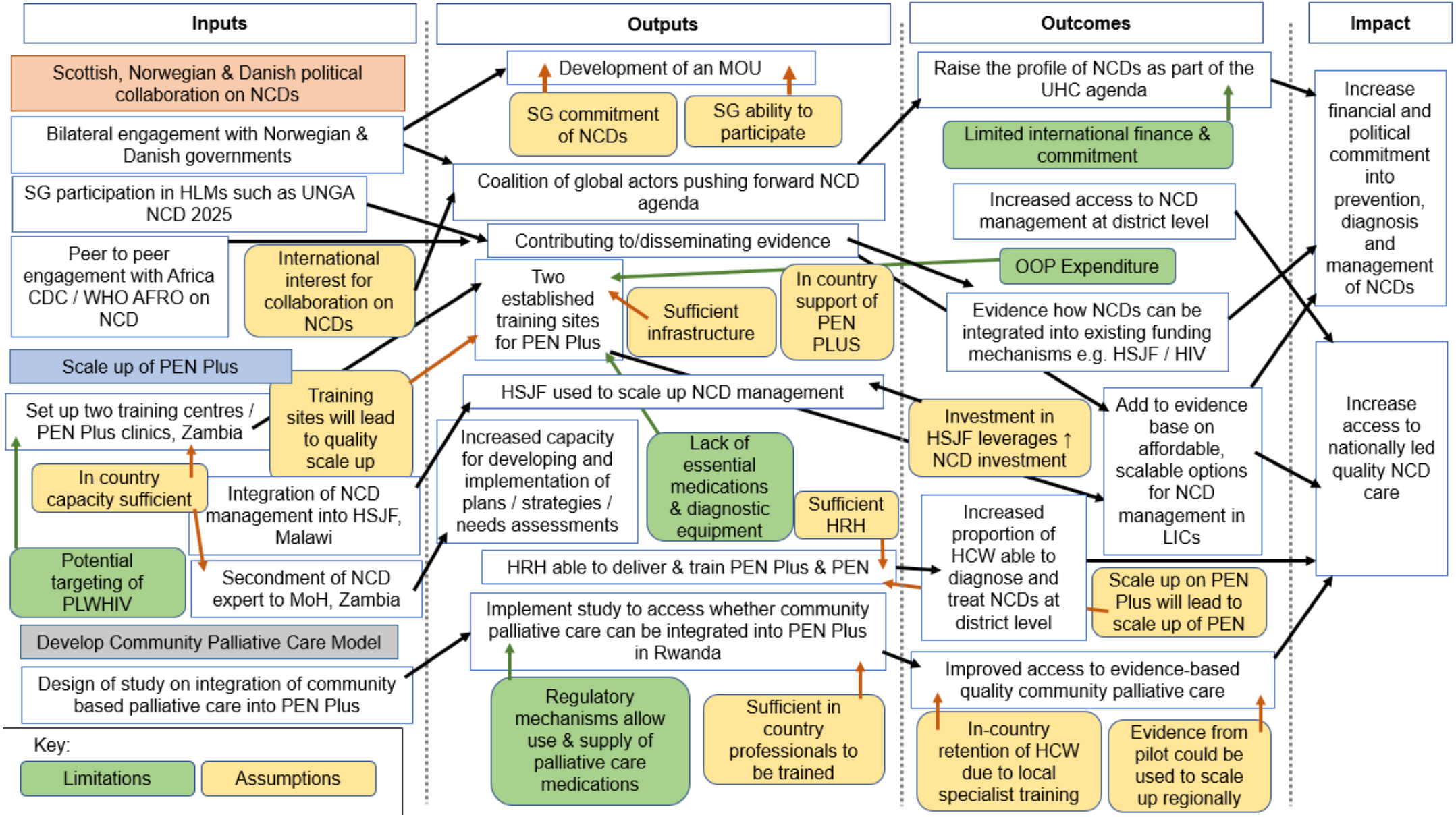
Statement	Strength	Sources	Summary
NCDs should be invested in at global level	High	WHO observatory data Global Burden of Disease studies Lancet NCDI poverty commission: Bridging a gap in Universal Health Coverage for the poorest billion	There is strong evidence articulating the burden of disease from NCDs globally.
There are evidence-based interventions for the prevention and management of NCDs	High	WHO Best buys	This forms the evidence-based framework for investing in NCDs. This is a global level strategy, so some recommendations may be less relevant for specific countries however it is the framework used to inform progress towards the SDGs.
There is a link between poverty and NCDs	High	Lancet NCDI poverty commission: Bridging a gap in Universal Health Coverage for the poorest billion	There is clear evidence on the link between poverty and NCDs, including the policy gap between global recommendations and interventions and the NCD needs of those living in the poorest billion.
Supporting NCDs will support the poorest	Low	Lancet NCDI poverty commission: Bridging a gap in Universal Health Coverage for the poorest billion	Although there is no direct evidence, extrapolating from Ethiopia and Rwanda, support of decentralised models of primary health care can reach the poorest if designed appropriately (evidence for maternal and child health).
NCDs should be invested in in Malawi, Rwanda & Zambia	Medium	WHO observatory data Global Burden of Disease studies	National data is available based on modelled estimates from the Global Burden of Disease. In country data from

Statement	Strength	Sources	Summary
		MoH Strategic Plans from Malawi, Rwanda and Zambia MoH NCD Plans from Malawi and Rwanda STEPS survey from Malawi, Rwanda and Zambia (all outdated)	surveys is available but support is needed to refresh it. In addition, support and advocacy is needed to integrate NCD indicators into the DHIS and HMIS.
Political partnerships will leverage support in NCDs	Medium	Mid-point evaluation of the implementation of the WHO global action plan for the prevention and control of noncommunicable diseases 2013–2020	The mid-point evaluation of the GAP for NCDs shows it has raised the profile of NCDs and improvement in some indicators, however, outcomes and impact not yet assessed. Whilst not directly related, experience from HIV, TB, Malaria, family planning, maternal and child health and from global policies such as the MDGs and SDGs shows the potential impact political and other alliances can have in raising awareness of a set of disease conditions. By working in partnership, the potential for impact is maximised.
Pooled funds should be utilised for NCD investment	Medium	Annual reviews and Project Completion reports on impact from development assistance for health and pooled funds. Anecdotal reports on benefits for Governments and MoH.	SWAp and Pooled Funds have been used in the health sector in many regions successfully, reducing overheads for participants.
Direct investment in PEN improves NCD care	Low to Medium	Global Strategy on WHO PEN	PEN is a global strategy that sets out recommendations on scale up of interventions for NCDs at health centre and

Statement	Strength	Sources	Summary
			community level. Whilst this is gold standard guidance, evidence on implementation is more limited, as is evidence on effectiveness of interventions on the health of the poorest. There is a severe lack of data on roll out of PEN in the three countries of focus for SG or indeed LLMICs more broadly. Anecdotal evidence from interviews suggests that the focus on the health centre level has slowed down implementation due to the sheer numbers of health workers needed to be trained and due to lack of access to basic diagnostics and treatments.
Direct investment in PEN PLUS improves NCD care	Medium	PEN-Plus – A regional strategy to address severe NCDs at first-level referral health facilities. Lancet NCDI poverty commission: Bridging a gap in Universal Health Coverage for the poorest billion	PEN Plus is the regional strategy adopted by MS in the WHO Africa region to improve NCD care in SSA. This is supported in the Lancet NCDI poverty commission on bridging the gap for the poorest billion, where they present evidence on integrated models of care. In addition, there were detailed discussions on this in a recent conference on PEN Plus and NCDs in Rwanda, where Rwanda and Malawi shared their experience of scaling up PEN Plus.
Investment in PEN Plus will lead to spill over benefits for scale up of PEN at health centre level	Low		Little to no evidence that spill over from PEN Plus to PEN will take place. Evidence on this needs to be collected.

Statement	Strength	Sources	Summary
Community based palliative care will integrate well into PEN Plus	Low		Community based palliative care used to be an important component of HIV management prior to scale up of ARVs. There is no evidence on how this model might be used for NCDs as part of PEN Plus, but the Rwandan government is keen to explore community based models of care. Work with partners including those at Harvard and Partners in Health could help pilot this approach and disseminate learning.
Peer-to-Peer support for NCDs will support partner countries to develop palliative care training programmes and models of care	Medium		Evidence on use of peer-to-peer approaches to build capacity and scale up NCD care is low and mainly anecdotal e.g., role of the Department of Health and social care in providing capacity to Africa CDC to support development of their regional strategy on NCDs via IANPHI or on links between Royal Colleges and country medical training systems to allow use of accreditation systems and processes. However, learning can be taken from other disease areas, and the use, approach, and impact of peer-to-peer programmes such as THET, VSO, and other collaborations.

Figure 14: Theory of Change



Appraisal Case – Part 2

How is cost effectiveness for NCDs measured globally?

58. The WHO standard approach is to rank cost effectiveness of an intervention against the GDP of the country (Table 8). WHO state that:[95]
    - Highly cost-effective if that the cost is less than GDP per capita
    - Cost effective if between one- and three-times GDP per capita
    - Not cost-effective if greater than three times GDP per capita.

59. WHO has provided an assessment of the most cost-effective best buys with regards to NCDs valued at under USD$100 (81.58 GBP)[96] per DALY averted in a LMIC. A summary of the main interventions is shown in Table 9.

Table 8: GDP per capita and World Health Organisation classifications of cost effectiveness in Malawi, Rwanda and Zambia

Country	GDP per capita (USD)	WHO Classification of very cost effective	WHO Classification of cost effective	WHO Classification of not cost effective
Malawi	634.8	<634.8	634.8-1904.4	>1904.4
Rwanda	822.3	<822.3	822.3- 2466.9	> 2466.9
Zambia	1137.3	<1137.3	1137.3-3411.9	>3411.9

[95] Republic of Rwanda (2015) Rwanda Non-communicable Diseases Risk Factors Report

[96] Exchange rate as of 3 February 2023.

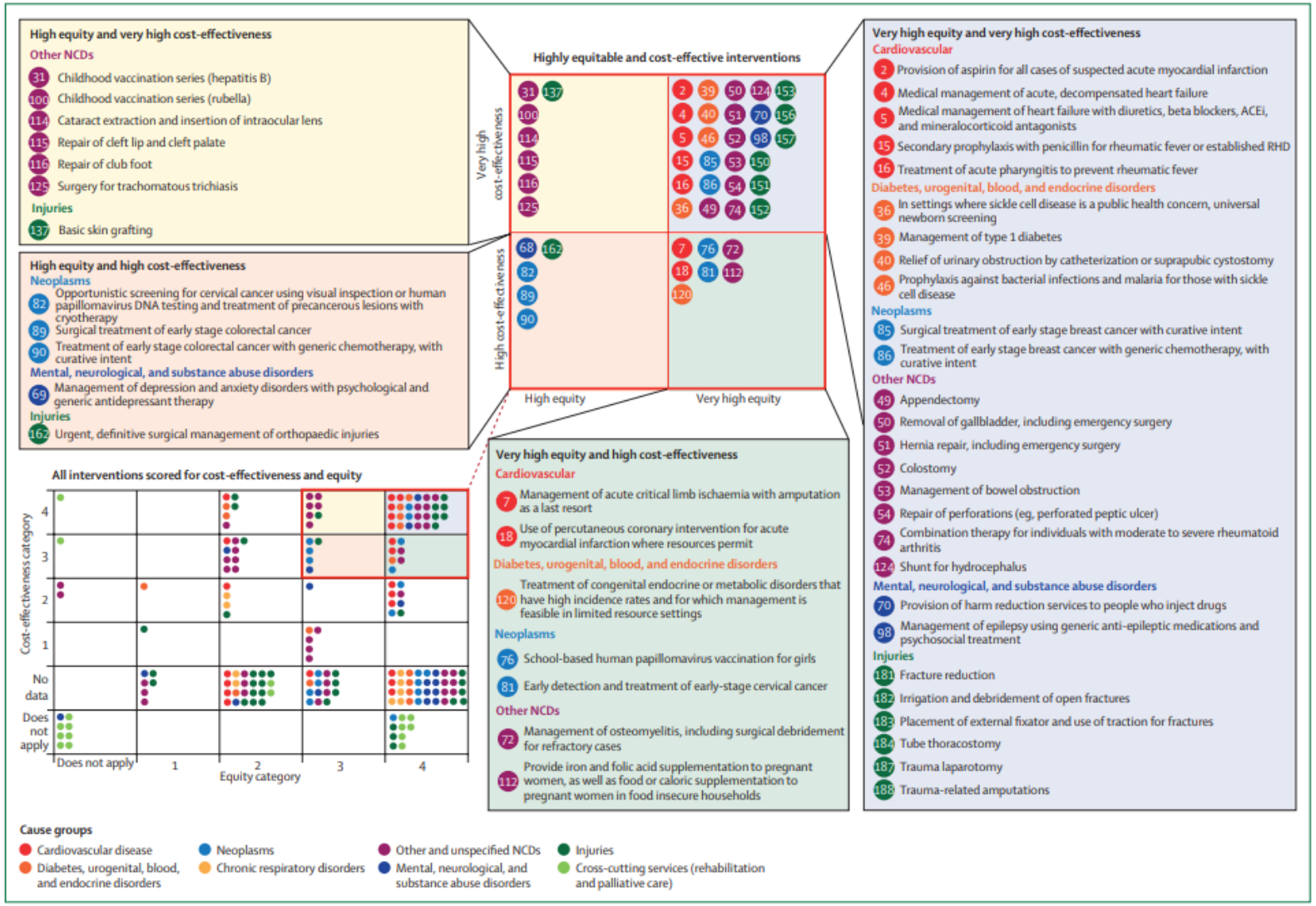
Table 9: World Health Organisation 'Best Buys'[97]

Risk factor or disease	Intervention
Tobacco Use	Tax Increases Plain/ standardised packaging Smoke free workplaces and public spaces Public awareness through mass media about harms Ban on advertising, promotion and sponsoring
Harmful Alcohol Use	Tax increases Restricted access to retailed alcohol Bans on advertising
Unhealthy diet and physical inactivity	Reduce salt intake in food through: • Product reformulation • Low salt options • Food labelling • Campaigns Public awareness through mass media about physical activity
Cardiovascular disease and diabetes	Counselling and multidrug therapy including glycaemic and BP control for people with high risk of developing cardiovascular events
Cancer	Vaccination against HPV Screening and treatment of precancerous lesions to prevent cervical cancer.

60. The Lancet Commission on NCDI Poverty scored a wide range of health sector interventions for cost effectiveness using systematic reviews, literature searches and consultation with the Global Health Cost-Effectiveness Analysis Registry ranking interventions on a scale of 1 to 4. For equity scoring a composite score was developed that incorporated concerns for priority to the poor, to women, to those with the least lifetime health and those with severe disabilities. This was validated using the DELPHI method. This method identified 27 health sector interventions for NCDs that were classed as highly cost effective and equitable (Figure 15).

[97] WHO (2017) Tackling NCDs: 'best buys' and other recommended interventions for the prevention and control of noncommunicable diseases.

Figure 15: Health Sector NCDI interventions scored for cost-effectiveness and equity[98]



[98] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044. Permission to reproduce content secured via RightsLink.

How does the proposed SG programme compare to global NCD standards?

61. Table 10 compares the proposed SG programme against the Best Buys and the shortlisted interventions from the NCDI Poverty Commission.

Table 10: Comparison of proposed SG programme to Best Buys and NCDI Poverty Commission report

Components of SG programme	Summary	WHO Best Buy overlap	NCDI Commission overlap
Global level	High level dialogue with likeminded partners; support for high level panels to disseminate and interrogate best practice and integration of NCDs into the UHC agenda.	Global advocacy on best buys including efforts to leverage finance and share learning	Global advocacy on PEN Plus including efforts to leverage additional finance and share emerging evidence
Regional WHO	Support for WHO AFRO or the MPTF	Enabling environment for implementation of the best buys including hosting of workshops, technical assistance, high level meetings etc	Support for WHO AFRO and specifically WHO Malawi, Rwanda and Zambia on NCDs and implementation of PEN Plus
Zambia Pen Plus training centre	Set up costs including curriculum development, training of trainers, provision of equipment or commodities, supervision, secondment to MoH	Indirect increase in awareness of NCDs	Medical management of heart failure Prevention and management of Rheumatic Heart Failure Newborn screening for and management of Sickle Cell Disease Diagnosis and management of Type 1 diabetes and complications Management of epilepsy
Malawi Pen Plus scale-up	$84 (68.5 GBP) per capita Infrastructure Commodities Training and supervision	Indirect increase in awareness of NCDs	

Components of SG programme	Summary	WHO Best Buy overlap	NCDI Commission overlap
Rwanda integration of palliative care into PEN PLUS		n/a	n/a
Peer to Peer	Includes for membership of PHS to IANPH[99]	Potential to work on all areas	Potential to work on all areas

62. Table 10 shows alignment between the proposed SG programme and in particular the package of very cost effective and equitable services as identified by the NCDI Poverty Commission. **The commission also proposes that complete coverage of the Essential UHC package will cost around USD$84 (68.5 GBP)[100] per capita, making it highly cost effective according to WHO definitions.** This is akin to the package of services being delivered by the HSJF in Malawi. It also included start-up costs rolled in to give an average cost. NCD costs accounted for around 62% of the estimated cost in LICs and 70% in LLMICs.

63. They assumed that an increase in coverage of NCD interventions to 25% from a baseline of USD$2.5 (2.04 GBP)[3] per capita would require an increase in spend per capita to USD$15 (12.2 GBP) in LICs.[101]

64. In terms of equity, PEN Plus improves access of the poorest to NCD diagnosis and care by explicitly ensuring a focus on NCDs not traditionally covered by global packages of care such as the WHO Best Buy series but that are of greater relevance to poorer and more vulnerable populations. In addition, Pen Plus moves care away from tertiary centres to district hospitals thus enabling some reduction in the distance patients need to travel to access care. However, in contrast to PEN which focuses on care at health centre level, support for PEN Plus assumes that services will be strengthened at health centre level in the medium to long term. In the interim barriers to accessing care and in particular long-term access to medication will need to be considered e.g. social protection measures to address travel costs, or OOPs or barriers to the long term cost of medication if not included in health insurance packages.

[99] Please note Public Health Scotland is already part of the network.

[100] Exchange rate as of 3 February 2023

[101] Bukhman G. et al (2020) Lancet NCDI Poverty Commission Study Group. The Lancet NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. Lancet. 3;396(10256):991-1044.

Limitations

65. Data on the cost effectiveness of PEN Plus is currently limited. As data emerges it will be easier to estimate the potential impact of the training and services in terms of DALY's or quality-adjusted life years (QALY's). In Zambia, funding of the training centre would take place alongside an existing research trial by the Zambian Government and University on PEN PLUS. The same applies for proposed plans to scale up Palliative Care in the community as part of PEN Plus in Rwanda. There is scope to work with the Rwandan Government to build the evidence base on this, depending on results. Malawi offers the opportunity to estimate incremental costs and coverage possible through integration of NCDs into a donor funded pooled fund that aims to support scale up of UHC. Once again SG funding could be used to add to the evidence base around this. Funding for palliative care and research into NCDs lags behind that of other areas of NCDs, so these components of the proposed programming offers an **opportunity to the SG to shape the future evidence base.**

66. Cost analysis of the political component is challenging. In the short term it is very difficult to measure the impact of dialogue or political engagement. In the medium to long term this might lead indirectly to a greater inclusion and financing of NCDs as part of the UHC agenda, but this would not be attributable to SG alone, and therefore difficult to measure.

What measures can be used to assess Value for Money for the intervention?

67. Economy: Are we buying inputs of the appropriate quality at the right price?
    a) Unit cost of selected commodities (selected if they are high cost/high volume or price fluctuates)
    b) Documented (total) savings on commodities (and other inputs)
    c) Average unit cost per training per person trained
    d) Unit cost per infrastructure units constructed/rehabilitated

68. Efficiency: How well are we converting inputs into outputs?
    e) Unit cost per training centre or health facility supported
    f) Joint funding with other donors through the HSJF means that the programme components can benefit from economies of scale and the absorption capacity of the HSJF will be monitored.
    g) Funding directed to the point of use as well as the use of results-based incentives could further improve efficiency and result in better health outcomes than direct central funding only.

69. Effectiveness: How well are the outputs produced by an intervention having the intended effect?

    h) Increased number of health workers trained

    i) Number of health facilities able to deliver PEN Plus

    j) Impact measures related to NCD mortality, NCD financing, training, following the main indicators in the log frame and related to the ToC.

70. Equity: How will benefits be distributed fairly/reach marginalised groups?

    The approach to equity is based on supporting provision of services at a district level, rather than at a tertiary hospital level. Strengthening of a community-based decentralised health model with more focus on primary healthcare will improve equity by reaching the poorest and hardest to reach, particularly those in rural areas where minimal funds flow to from the centre. Indicative indicators include:

    k) Availability of data on NCDs from district hospitals, including disaggregated data.

    l) Advocacy for further WHO STEPwise approach to surveillance (STEPS) surveys and DHIS NCD components to understand service reach better.

    m) Increased coverage and access to NCD services across more facilities.

    n) Increased proportion of health workers outside urban centres able to deliver PEN Plus.

Summary Value for Money Statement for the preferred option

71. As noted, there is strong evidence to suggest that interventions to tackle NCDs are at an individual preventive level highly cost effective in comparison to WHO estimates. However, it is challenging to quantify the specific cost benefits associated with the proposed SG programme in part due to a lack of robust data on cost effectiveness of packages of care in LICs, and due to some of the interventions currently being considered pilots. SG intervention at political level has the potential to influence partner interests in NCDs, and to raise additional finance towards this largely neglected space. SG funding for regional and national programmes has the potential to add to the evidence base, building evidence of effectiveness.

Delivery modalities

72. SG has requested a model of delivery that limits the number of contracts issued. Assuming Option 3 as the preferred choice two delivery modalities are proposed for further consideration:

(a) Funding to one single agency that then channels support to the three countries:

i. Multi-Partner Trust Fund (MPTF): Funding is channelled to a financial instrument such as the MPTF. At present there are no large funding instruments set up to support delivery of NCD care. The MPTF has been set up to fill such a gap, with a focus on direct support to countries through the main UN partners working in this space: WHO, the World Bank, UNDP and UNICEF. Funding would be used to move forward policy development at national, regional and global level and to support direct delivery of priorities such as PEN Plus at country level. The MPTF would be required to provide reporting and oversight of the programme as required by SG. Discussions would be needed to understand whether the MPTF is able to deliver the programme as designed by SG including components on palliative care and also whether there are other like-minded development partners investing in the fund. In addition, it will be important to discuss and understand potential overhead costs which may be fixed.

ii. Independent fund manager identified through competitive tender: This would involve commissioning an overarching entity to oversee and manage the programme. Such an agency would be identified through competitive tender and would be required to oversee and monitor delivery of the different components of the programme design. The commissioned agency may be a private sector organisation, a UN body, an academic body or a civil society organisation. In terms of oversight and reporting, either SG could ask the fund manager for a point of contact e.g. the secondee into the Zambian MoH for Zambia and similar for the other two partner countries.

(b) Split funding into two separate LOTS. One LOT will focus on Malawi with direct channelling of funding to the HSJF with oversight, management and reporting provided by the Fund Manager. A second LOT would be awarded through competitive tender on support for scale up of PEN Plus in Zambia and integration of Palliative care into PEN Plus in Rwanda with similar arrangements for oversight, management and reporting.

73. Neither option includes work proposed at global level or the peer-to-peer learning component. Advantages and disadvantages of each modality have been listed Table 11.

Table 11: Advantages and disadvantages of different delivery modalities

Delivery modality	Advantages	Disadvantages
Funding to the MPTF to channel support to the three countries:	• Single contract making oversight and management less fragmented. • Potential to ask that funds are targeted towards Malawi, Rwanda and Zambia. • May allow SG the opportunity to lean into multilateral system and work with range of UN partners if the MPTF is chosen as the preferred delivery modality. • Potential to influence other member states to join MPTF	• Relatively high overheads (likely >7%) • Limited influence over spending decisions. • Close scrutiny of spend beyond allocation to specific countries may be challenging. • May not allow highly innovative approaches to be priorities e.g. integration of community palliative care into PEN Plus in Rwanda or channelling of funds into pooled instruments at country level • Specific reporting to SG may be limited. • Limit the ability of SG to support localisation agendas
Independent entity identified through competitive tender (support for the HSJF in Malawi, support for the set up and running of training centres in Zambia and integration of palliative care into PEN Plus in Rwanda)	• Single contract making oversight and management less fragmented. • Could include specific reporting arrangements for SG.	• Could be challenging to find an agency with the skills to deliver each of the different components whilst also being able to deliver on localisation/ decolonisation agendas etc. • May be relatively high overheads with duplication of overheads in Malawi if funds are to be channelled to the pooled fund as recommended. • May be challenging to direct funds to pooled funds such as in Malawi • May limit SG influence at country level
Split funding to two different entities	• Reduction in overheads fees for contribution to Malawi as oversight, reporting, and financial management done via the fund manager. • Increased likelihood to find partner with research and implementation skills to share evidence from Zambia and Rwanda. • Options to ask the secondee into the Zambian MoH to provide reporting to SG, and scope for a similar TA focal point identified in Rwanda.	• SG would need to engage directly in the programme in Malawi

Appendix 1: Semi-structured interviews

Semi-structured interview schedule used for key informant interviews whilst scoping for the Scottish Government International Health Program:

- What is the scale of the NCD challenge?
- What is your understanding of the government priorities and progress in NCDs?
- Can you share with us an overview of the donor landscape for NCDs in the region / country.
- What is your organisations priorities?
- Who do you recognise as the main implementers for NCDs in country/regionally or other important stakeholders in the NCD sphere?
- What do you recommend as priorities for Scottish Government, who wish to focus on NCDs?

Appendix 2: Country snapshots – Malawi

Economic-political situation

Malawi is one of the poorest countries in the world. With an economy dependent on agriculture and a predominantly rural population 73.5% of the population live on less than US$2.15 per day.[102] It is currently in a macroeconomic crisis, following multiple shocks including storms, droughts, and COVID-19. Politically it is generally stable, with a five-year election cycle. The current government has been in power since 2019.

Table 12: Size and age of population in Malawi (2020, 2035, and 2050)[103]

	2020	2035	2050
Population (million)	19.4	28.0	37.3
Median age	18.1	21.2	24.4

Financial management

Following the 2013 Cashgate scandal external donor support external partner development support is now channelled via multilaterals or the third sector. Funding is used to support the delivery of national health plans as set out in the Health Sector Strategic Plan which has just been revised. The preferred route for external development partner support is the Health Services Joint Fund.

Health funding

In 2021, Malawi spent 10% of its budget on health, 2.9% of GDP.[104] This equates to $30.4 per capita in 2019, down from a peak of $38.4 in 2017. In 2020/2021 23% of total health expenditure came from domestic sources, an increase from 15.8% in 2012. The remainder is through development assistance for health. Insurance schemes don't cover chronic care so OOP payments are high.[105]

[102] Malawi population, 2022

[103] Malawi population, 2022; Average age of the population, Malawi 1950-2050

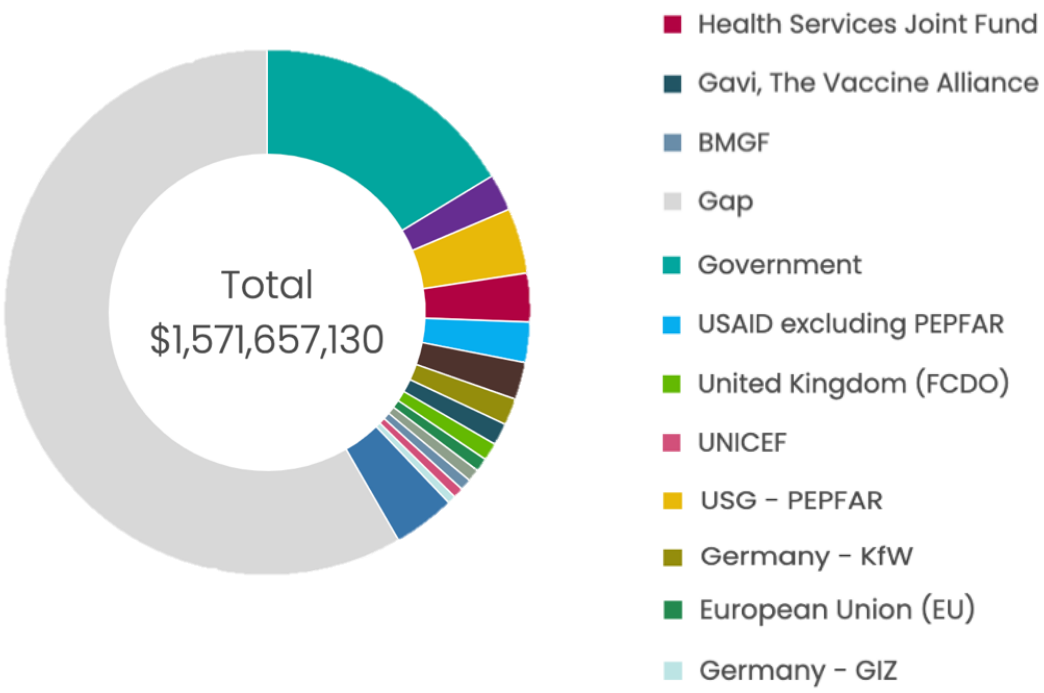
[104] World Bank Group – Global Financing Facility: Malawi

[105] World Bank Group – Global Financing Facility: Malawi; Republic of Malawi (2017) Malawi National STEPwise Survey for Non-Communicable Diseases Risk Factors 2017 Report

Table 13: Key statistics – Malawi[106]

	2010	2017-20
Rural population	84%	83%
Birth rate	5.3	4.1
Population living under national poverty line	50.7%	50.7%
Population living under international poverty line	68.4%	73.5%
GDP per capita	$476	$642
<5 mortality per 1,000 live births	84	38.6
MMR[107] per 100,000 live births	444	34
Life expectancy	56	65

Figure 16: Resource mapping in Malawi's health sector, financial year 2021[108]

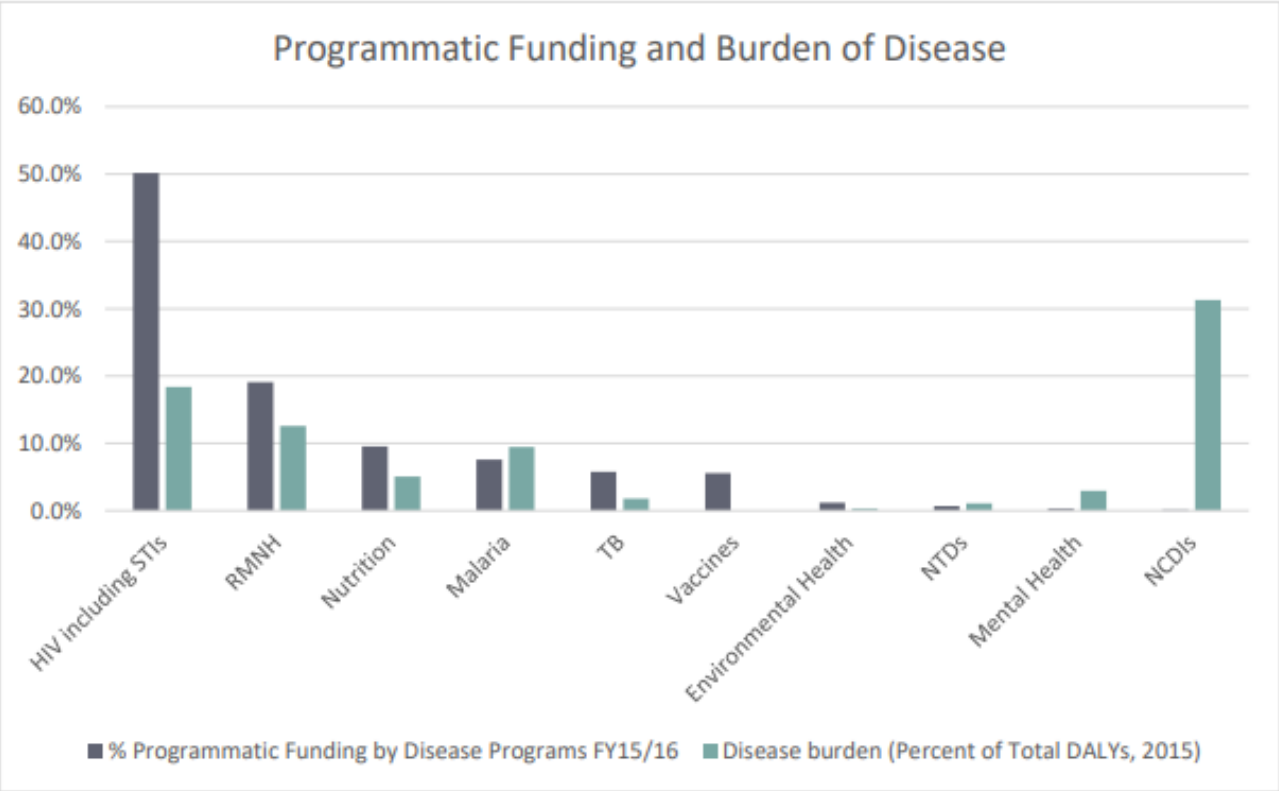


[106] Malawi population, 2022; The World Bank – Malawi data

[107] Measles, Mumps and Rubella

[108] Global Financing Facility (2022) GFF Partnership annual report 2021-22

Figure 17: Programmatic funding and burden of disease



Source: Republic of Malawi (2017) National Action Plan for the Prevention and Management of Non-Communicable Diseases in Malawi, 2017-2022.

Table 14: Risk factors for NCDs in Malawi for men and women[109]

Risk factor	Male	Female
% smokers	21.7	1.5
% drink alcohol	32.8	2.8
% overweight	9.4	27.8
Mean salt intake	10.4g (2 times WHO recommendation)	

[109] Republic of Malawi (2017) Malawi National STEPwise Survey for Non-Communicable Diseases Risk Factors 2017 Report

Appendix 3: Country snapshots – Rwanda

Economic-political situation

Rwanda has made significant progress since the genocide of 1994. The current government, under the leadership of Paul Kagame, was re-elected in 2018 following an amendment of the constitution to allow a third term. Poverty has declined from 77% in 2001 to 55% in 2017. Socioeconomic and geographic inequalities are high and people with disabilities are significantly over-represented in the poorest quintiles. The economy continues to grow with an average growth of 7.2% in 2019, and an increase in per capita gross domestic product (GDP) of 5%.[110]

Table 15: Population in Rwanda (2020, 2035, and 2050)[111]

	2020	2035	2050
Population (million)	13.1	18.0	23.0

Health funding

Rwanda has increased its health budget by 33.6% in the last year, with the health budget share increasing to 9.2% in 2022. In 2021/22, domestic resources allocated to the health sector account for 43.2 per cent of the health sector budget, down from 51.4 per cent in 2020/21.[112]

Out of pocket expenses

Two major insurers (CBHI and RSSB) cover around 90% of the population. Out of pocket payments remain low in Rwanda accounting for around 8% of total health spend in 2014/2015.[113]

[110] The World Bank: Rwanda overview

[111] Rwanda population, 2022

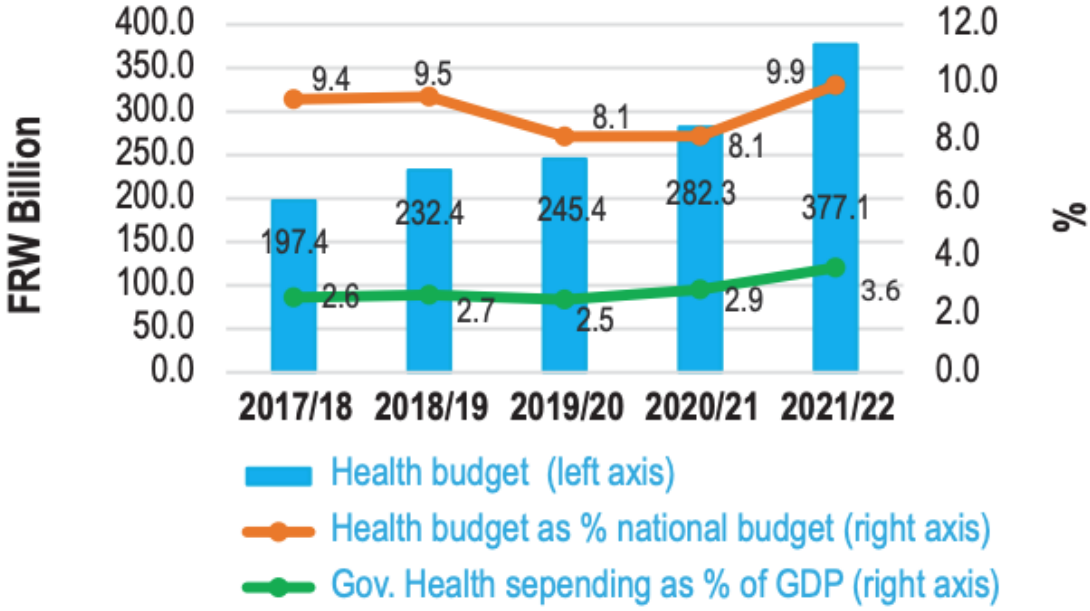
[112] *UNICEF – Health Budget Brief: Investing in Children's Health in Rwanda 2021/22.*

[113] Republic of Rwanda (2018) Health Financing Strategic Plan 2018-2024

Table 16: Key statistics – Rwanda[114]

	2022
Rural population	82.4%
Birth rate	3.93
Population living under national poverty line	38.3%
Population living under international poverty line	56.3%
GDP per capita	$834
<5 mortality per 1,000 live births	40.5
MMR[115] per 100,000 live births	248
Life expectancy	69

Figure 18: Health budget in Rwandan Francs (FRW) billion and as a share of total budget and GDP



Source: UNICEF – Health Budget Brief: Investing in Children's Health in Rwanda 2021/22. Reproduced under a CC-BY license.

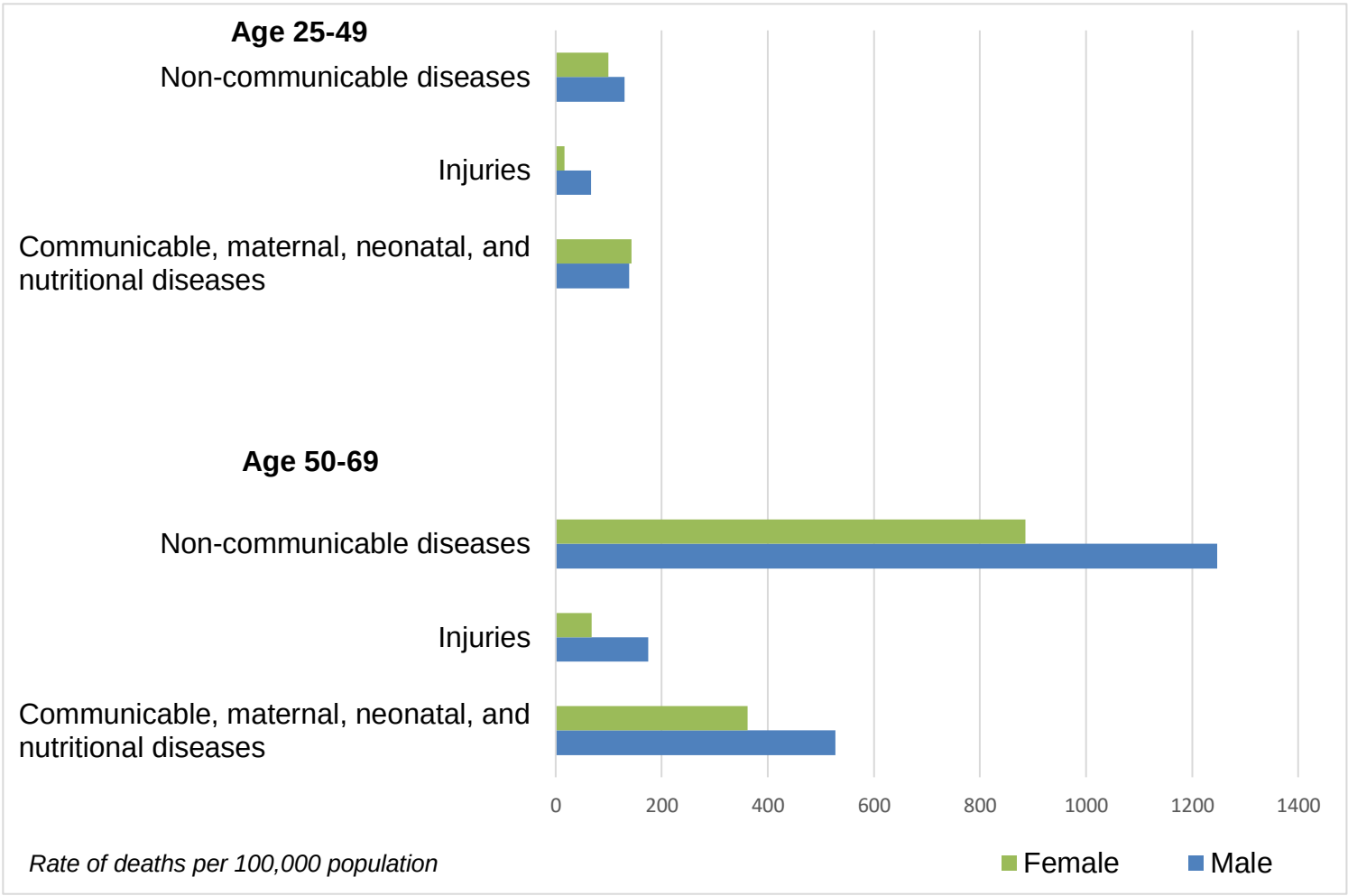
[114] The World Bank: Rwanda data

[115] Measles, Mumps and Rubella

Table 17: Risk factors for NCDs in Rwanda for men and women[116]

Risk factor	Male	Female
% smokers	19.2	7.1
% binged alcohol in last week	30.0	17.0
% overweight	17.1	
% obese	2.8	

Figure 19: Cause of death by rate – Rwanda[117]



[116] Republic of Rwanda (2015) Rwanda Non-communicable Diseases Risk Factors Report

[117] Institute for Health Metrics and Evaluation (2019) Global Burden of Disease study results

Appendix 4: Country snapshots – Zambia

Economic-political situation

Despite having one of the world's fastest growing economies in the decade prior to 2011, in 2020, 54% of the population live below the poverty line. GDP is expected to grow by 3.8% in the coming years, although there are growing inequalities in this increasingly urbanised country. Zambia is considered stable, with the last election of a new President in 2021. Zambia had been declared a lower middle-income country in 2010, and this has led to the exit of some donors, but this has since been revoked.[118]

Table 18: Size and age of population in Zambia (2020, 2035, and 2050)[119]

	2020	2035	2050
Population (million)	18.9	27.8	37.5
Median age	17.6	20.2	22.8

Health Funding

In 2021 government allocation to health was low, at 8.1% of the total budget. This equates to 3% of GDP. In 2022 only 15% of the health budget is expected to come from external sources. 84% of development assistance for health prioritises communicable diseases, maternal and child health, nutrition and health system strengthening. At present there are no development partners specifically on NCDs. Poor fiduciary management and corruption particularly related to medicines procurement led external partners to move away from a SWAP. However anecdotal reports suggest that recent political changes are seen as positive (KIIs). Chronic care for NCDs is not covered in insurance schemes, so OOP expenditure is high.[120]

[118] The World Bank – Zambia overview

[119] Zambia population, 2022; Average age of the population, Zambia 1950-2015

[120] UNICEF (2022) Health Budget Brief – Zambia

Figure 20: Resource mapping in Zambia's health sector, financial year 2019[121]

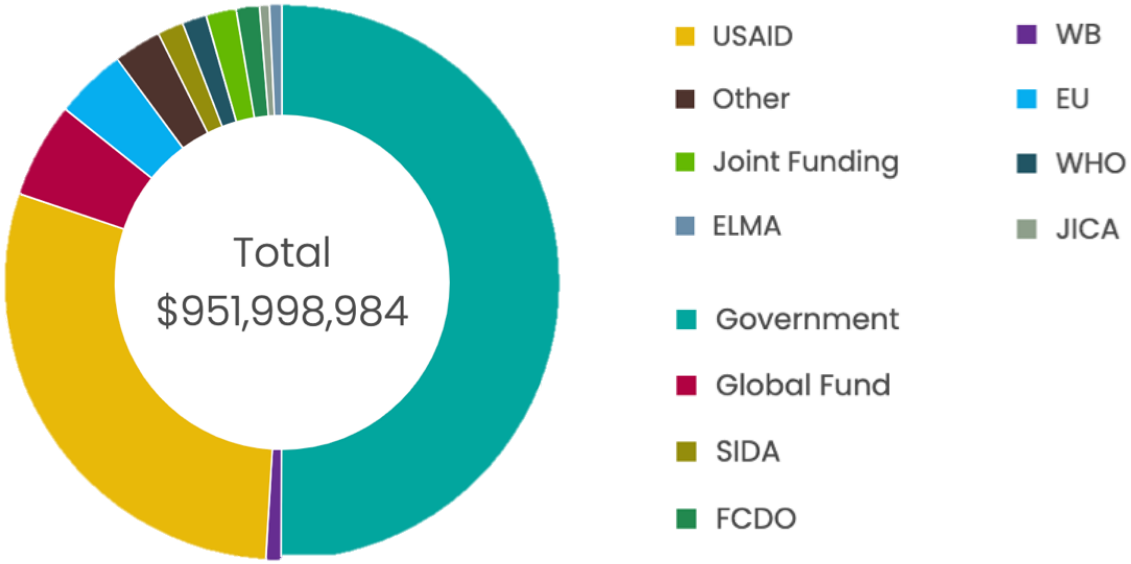


Table 19: Key statistics – Zambia[122]

	2009-2010	2018-20
Rural population	61.0%	54.6%
Birth rate	5.4	4.5
Population living under national poverty line	54.7%	54.5%
Population living under international poverty line	68.5%	57.5%
GDP per capita	$1,490	$1,121
<5 mortality per 1,000 live births	77.0	61.4
MMR[123] per 100,000 live births	305	213
Life expectancy	56	64

[121] Global Financing Facility (2022) GFF Partnership annual report 2021-22

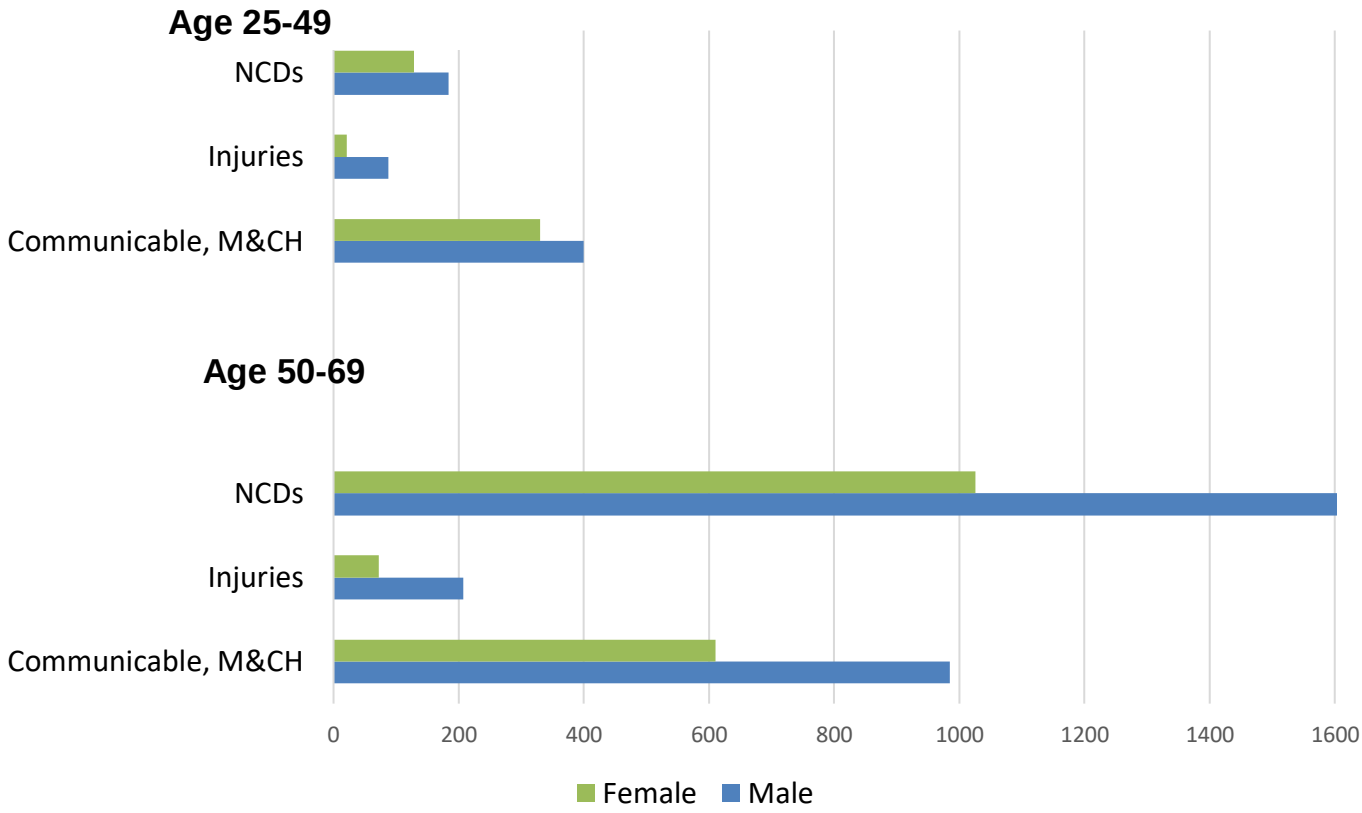
[122] The World Bank – Zambia data

[123] Measles, Mumps and Rubella

Table 20: Risk factors for NCDs in Zambia for men and women[124]

Risk factor	Male	Female
% smokers	24.0	7.8
% drink alcohol	16.8	5.1
% obese	3.0	12.3
Mean salt intake	9.5g (2 times WHO recommendation)	

Figure 21: Cause of death by rate – Zambia[125]



Rate of deaths per 100,000 population

[124] Republic of Zambia (2017) Zambia Steps Survey for Non-Communicable Diseases Report

[125] Institute for Health Metrics and Evaluation (2019) Global Burden of Disease study results

Appendix 5: Achievement toward GAP targets – Malawi[126]

- Total population: 18,629,000
- Percentage of deaths from NCDs: 40%
- Total number of NCD deaths: 43,500
- Probability of premature mortality from NCDs: 23%

1. National NCD targets: **Fully achieved**
2. Mortality data: **Not achieved**
3. Risk factor surveys: **Partially achieved**
4. National integrated NCD policy/strategy/action plan: **Fully achieved**
5. Tobacco demand-reduction measures
    a) Increased excise taxes and prices: **Partially achieved**
    b) Smoke-free policies: **Not achieved**
    c) Large graphic health warnings/plain packaging: **Not achieved**
    d) Bans on advertising, promotion and sponsorship: **Not achieved**
    e) Mass media campaigns: **Not achieved**
6. Harmful use of alcohol reduction measures
    a) Restrictions on physical availability: **Fully achieved**
    b) Advertising bans or comprehensive restrictions: **Not achieved**
    c) Increased excise taxes: **Not achieved**
7. Unhealthy diet reduction measures
    a) Salt/sodium policies: **Not achieved**
    b) Saturated fatty acids and trans-fats policies: **Not achieved**
    c) Marketing to children restrictions: **Not achieved**
    d) Marketing of breast milk substitutes restrictions: **Partially achieved**
8. Public education and awareness campaigns on physical activity: **Not achieved**
9. Guidelines for management of cancer, CVD, diabetes and CRD: **Fully achieved**
10. Drug therapy/counselling to prevent heart attacks and strokes: **Not achieved**

[126] WHO (2022) Noncommunicable Diseases Progress Monitor 2022. Reproduced under CC-BY license

Appendix 6: Achievement toward GAP targets – Rwanda[127]

- Total population: 12,627,000
- Percentage of deaths from NCDs: 50%
- Total number of NCD deaths: 32,400
- Probability of premature mortality from NCDs: 20%

1. National NCD targets: **Fully achieved**
2. Mortality data: **Not achieved**
3. Risk factor surveys: **Partially achieved**
4. National integrated NCD policy/strategy/action plan: **Fully achieved**
5. Tobacco demand-reduction measures
    a) Increased excise taxes and prices: **Partially achieved**
    b) Smoke-free policies: **Not achieved**
    c) Large graphic health warnings/plain packaging: **Partially achieved**
    d) Bans on advertising, promotion and sponsorship: **Not achieved**
    e) Mass media campaigns: **Fully achieved**
6. Harmful use of alcohol reduction measures
    a) Restrictions on physical availability: **Partially achieved**
    b) Advertising bans or comprehensive restrictions: **Fully achieved**
    c) Increased excise taxes: **Not achieved**
7. Unhealthy diet reduction measures
    a) Salt/sodium policies: **Not achieved**
    b) Saturated fatty acids and trans-fats policies: **Partially achieved**
    c) Marketing to children restrictions: **Not achieved**
    d) Marketing of breast milk substitutes restrictions: **Partially achieved**
8. Public education and awareness campaigns on physical activity: **Not achieved**
9. Guidelines for management of cancer, CVD, diabetes and CRD: **Fully achieved**
10. Drug therapy/counselling to prevent heart attacks and strokes: **Not achieved**

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Appendix 7: Achievement toward GAP targets – Zambia[128]

- Total population: 17,861,000
- Percentage of deaths from NCDs: 35%
- Total number of NCD deaths: 42,100
- Probability of premature mortality from NCDs: 25%

1. National NCD targets: **Not achieved**
2. Mortality data: **Not achieved**
3. Risk factor surveys: **Partially achieved**
4. National integrated NCD policy/strategy/action plan: **Not achieved**
5. Tobacco demand-reduction measures
    a) Increased excise taxes and prices: **Not achieved**
    b) Smoke-free policies: **Partially achieved**
    c) Large graphic health warnings/plain packaging: **Not achieved**
    d) Bans on advertising, promotion and sponsorship: **Not achieved**
    e) Mass media campaigns: **Partially achieved**
6. Harmful use of alcohol reduction measures
    a) Restrictions on physical availability: **Fully achieved**
    b) Advertising bans or comprehensive restrictions: **Not achieved**
    c) Increased excise taxes: **Not achieved**
7. Unhealthy diet reduction measures
    a) Salt/sodium policies: **Partially achieved**
    b) Saturated fatty acids and trans-fats policies: **Not achieved**
    c) Marketing to children restrictions: **Not achieved**
    d) Marketing of breast milk substitutes restrictions: **Partially achieved**
8. Public education and awareness campaigns on physical activity: **Not achieved**
9. Guidelines for management of cancer, CVD, diabetes and CRD: **Fully achieved**
10. Drug therapy/counselling to prevent heart attacks and strokes: **Not achieved**

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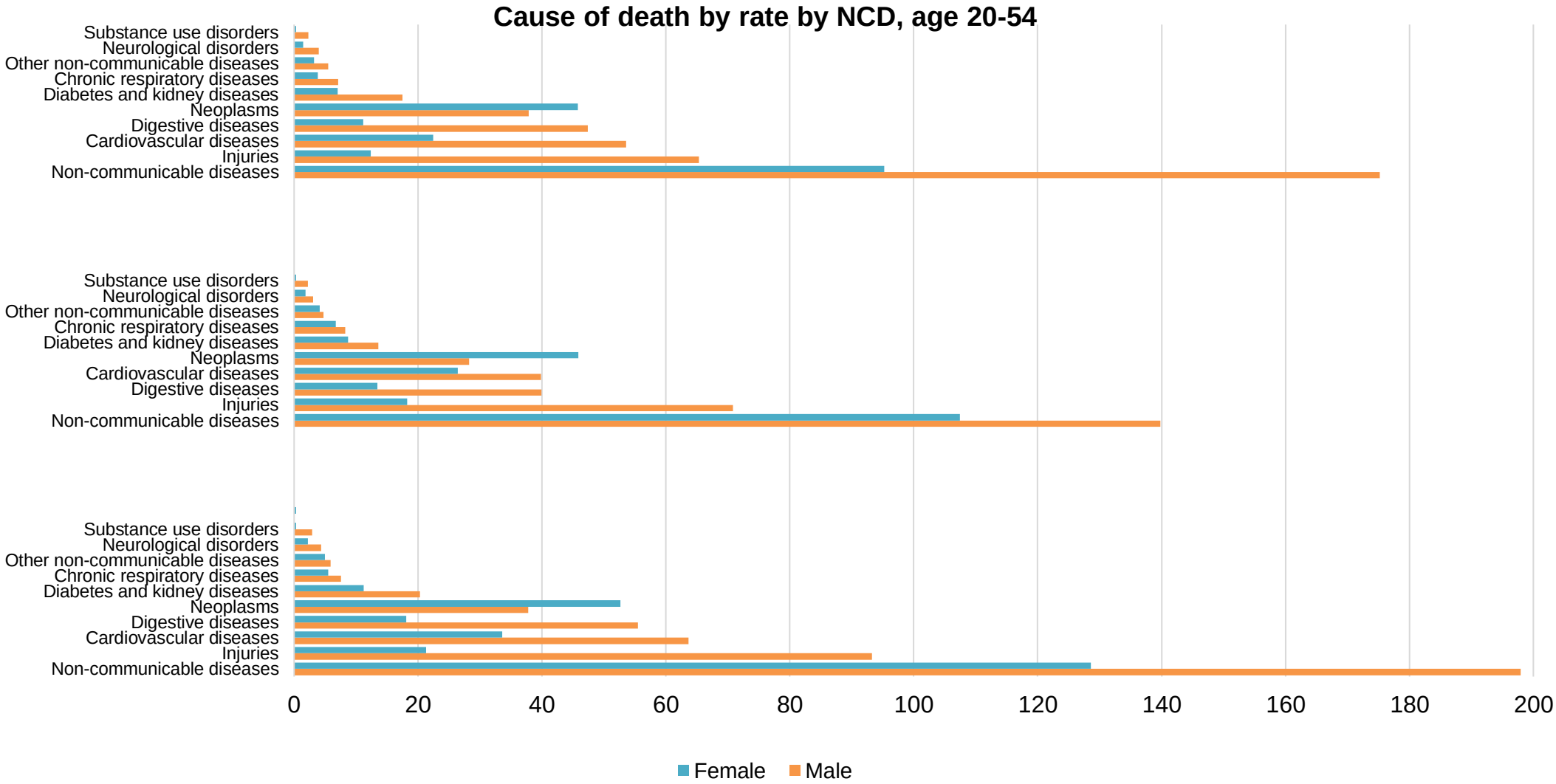
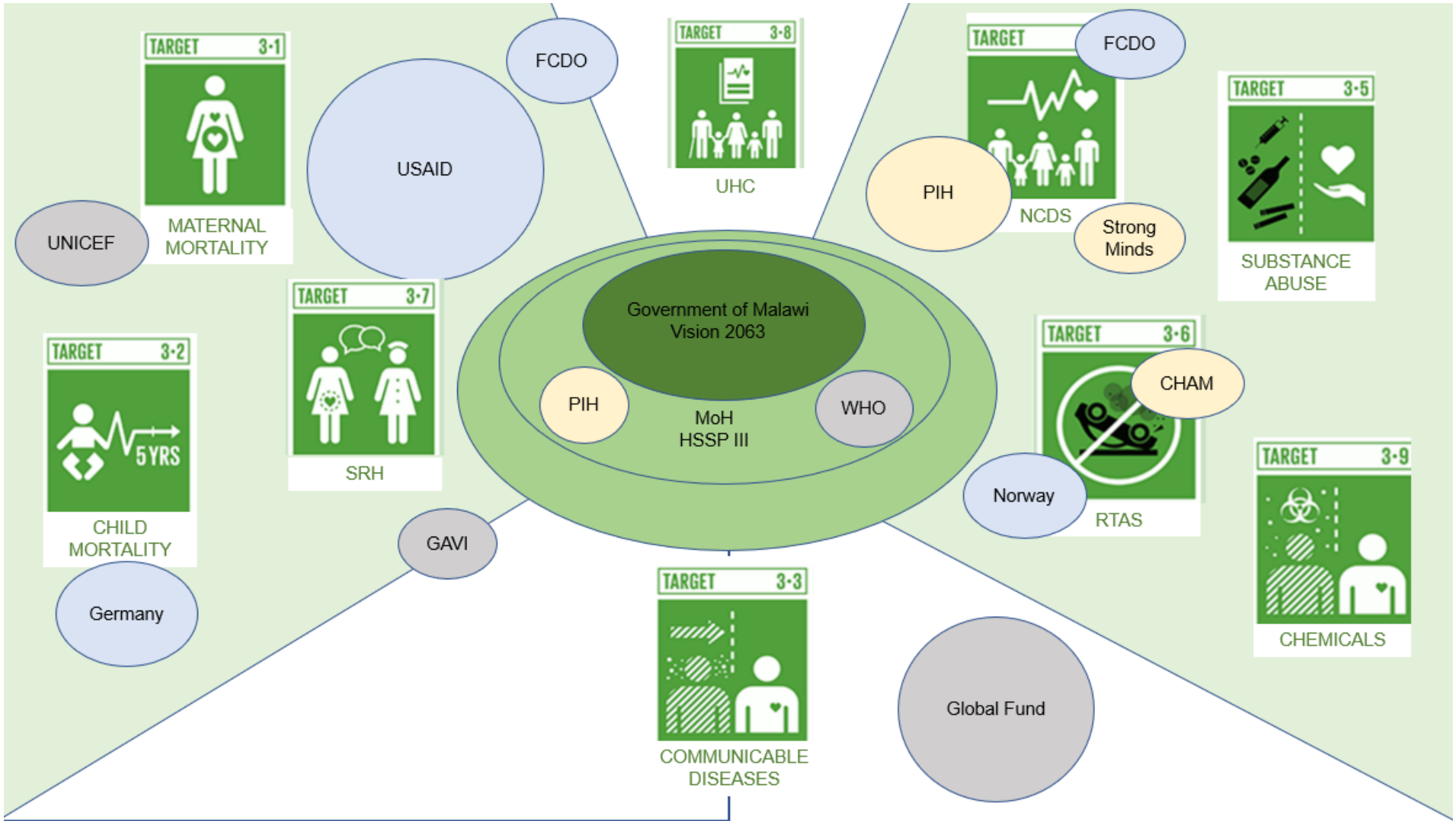
Appendix 8: Country mortality data[129]



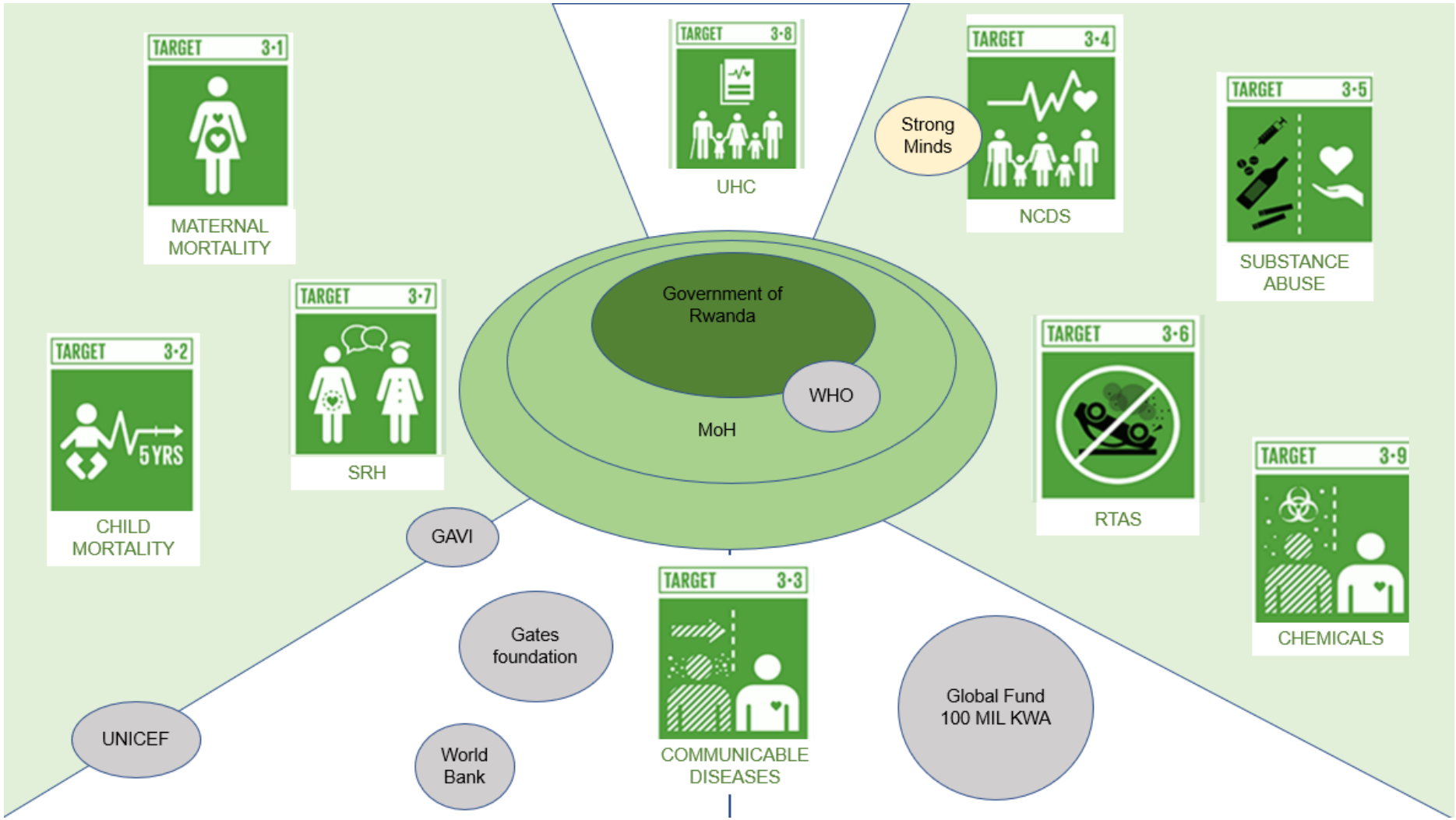
[129] Institute for Health Metrics and Evaluation (2019) Global Burden of Disease study results

Appendix 9: Stakeholder mapping – Malawi[130]



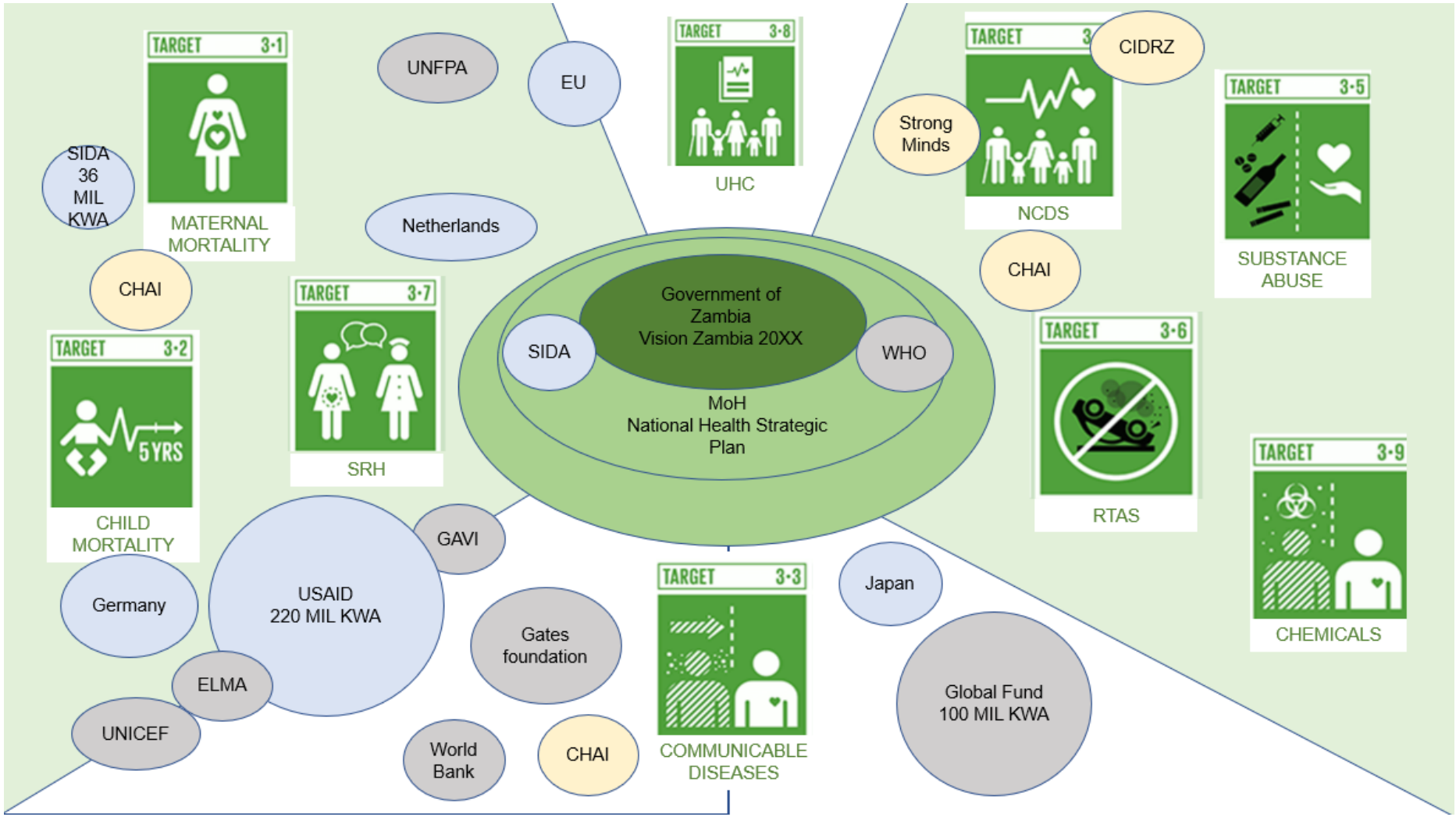
[130] This is not intended to be comprehensive but a reflection of data gathered through KIIs and policy documents. Bubbles are indicative of spend size but are not accurate to scale.

Appendix 10: Stakeholder mapping – Rwanda[131]



[131] This is not intended to be comprehensive but a reflection of data gathered through KIIs and policy documents. Bubbles are indicative of spend size but are not accurate to scale.

Appendix 11: Stakeholder mapping – Zambia[132]



[132] This is not intended to be comprehensive but a reflection of data gathered through KIIs and policy documents. Bubbles are indicative of spend size but are not accurate to scale.

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