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The COP26 health commitments: A springboard towards environmentally sustainable and climate-resilient health care systems?

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The 26th Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change took place in Glasgow, United Kingdom, in November 2021. It was the first COP since governments were due to have submitted updated nationally determined contributions (NDCs), setting out commitments to meet the Paris Agreement[1]. According to the 2021 UN Emissions Gap Report, even if all unconditional 2030 climate pledges are fully implemented, the world is on course for a 2.7C temperature rise by the end of the century, with catastrophic implications for human health[2]. In fact, at present levels of warming (1.1C), climate change is already exerting devastating health impacts around the world[3].

While mitigation - the action of reducing further harmful emissions - is more urgent than ever, national representatives at COP26 commented on how this was not balanced with attention, technical resources, and financing for adaptation, particularly for low- and middle-income countries (LMICs) to enable them to protect their populations from the growing health impacts of climate change. Indeed, limited financial resources present a major challenge in low-resource settings, especially for adaptation. Governments of high-income countries (HICs) have still not delivered on their commitment of 100bn USD annually by 2020 to support LMICs to implement climate change mitigation and adaptation measures across all sectors [4,5]. However, even this level of funding would fall far short of the trillions needed (1.6–3.8 trillion USD annually for mitigation to limit warming to 1.5C and 280–500 trillion USD annually for adaptation by 2050 in developing countries alone)[4,6].

COP26 further highlighted the dangerous progression of climate change due to insufficient ambition. The state of health systems, which are comprise of the people, institutions, and actions required to deliver health services to improve the health outcomes of a target population, will play a central role in determining whether appropriate care can be delivered in the face of climate risks[7]. Yet, it is estimated that health systems worldwide emit 4.9% of greenhouse gas (GHG) emissions – paradoxically also contributing to the climate-health emergency itself[8]. Furthermore, those in lower resource settings with less access to high-quality health care are expected to endure the worst effects[3,9,10]. Therefore, given that health systems are already facing the impacts of climate change, it is imperative that adaptation is prioritized in both planning and budgeting where needed.

Ahead of COP26, the Global Climate and Health Alliance (GCHA) launched the Healthy NDC Scorecard, which provides an overview of the extent to which health considerations are included in national climate commitments. The Scorecard indicates that the reflection of health considerations in national climate commitments is strongest in countries most vulnerable to climate impacts[11]. Still, a more in-depth focus on health system mitigation and adaptation is needed. The World Health Organization (WHO), Health Care Without Harm, the UK COP Presidency and the UNFCCC Climate Champions launched a country commitments platform as part of their COP26 Health Programme as a solid first step towards such an outcome. Overall, a total of 51 countries made commitments, of which 50 committed to a climate-resilient health system, 46 to a

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sustainable, low carbon health system, and 14 to a net-zero health system. According to the Programme's guiding stipulations, actions to deliver commitments on resilience included conducting vulnerability and adaptation assessments, developing national adaptation plans (NAPs), and using these as a basis to apply for funding for implementation. Meanwhile, countries committing to more environmentally sustainable health systems were encouraged to carry out a baseline assessment of GHG emissions and to develop a plan of action with an accompanying timeline. Finally, the net-zero commitment for the health system included setting a target date ideally in advance of 2050 [12].

In order to provide a global perspective on the COP26 Health Programme, we conducted a document review of the most recent NDCs and adaptation communications submitted before the close of COP26 on the 12th of November 2021 by countries that made commitments as part of the COP26 Health Programme. Table 1 reflects our analyses, recording text identified as related to these commitments. While a myriad of other policies exist at both national and international levels in which health system mitigation and adaptation actions might be detailed, NDCs and adaptation communications provide an overall snapshot of a country's national priorities related to delivering on the Paris Agreement at the time the relevant document was submitted. At the global level, we found that out of the countries that committed to the respective commitments, most countries (76%, 38 out of 50, see Table 1) have some language on health systems resilience in their NDC, which can serve as a basis for more detailed plans if not already existing outside of these documents. However, comparatively few countries (24%, 11 out of 46, see Table 1) currently have language in these documents relating to health system mitigation, potentially indicating that detailed policies are less likely to already be in place. While many countries include a brief mention of resilient or sustainable health systems, most do not include a detailed plan. Amongst the countries which do integrate notable detail are Lao People's Democrative Republic, Chile, and Colombia[1]. In addition, Fiji refers to a fully developed national mitigation and adaptation plan in the context of health, contained in a separate document[13]. The authors also note that no NDC or adaptation communication explicitly referred to the interaction between adaptation and mitigation measures, either through synergies, co-benefits, conflicts or trade-offs. While Togo does mention the creation of solar water heaters in 122 health centres as an adaptation mechanism - which presumably also contributes to mitigation - it is not clear whether the mitigation benefits of this action were also recognized.

The way forward

The COP26 Health Commitments proved to be a valuable mechanism for demonstrating the willingness of health systems to do their share in responding to the climate crisis through both mitigation and adaptation. However, while commitment is a requisite first step for action, implementation cannot be guaranteed. Especially for mitigation actions, which are not widely reflected in the analysed documents, these commitments may, in some cases, be the first announcement of such intention[14]. Furthermore, the commitments will only be realised if accompanied by country-specific policy development and implementation. At present, there is no established accountability mechanism to monitor the delivery of these commitments, nor of financing to support such implementation, with the latter identified as the leading national barrier to the implementation of national climate and health plans and strategies [14]. To transition from commitment to action, countries should integrate health system adaptation, mitigation, and resilience considerations into national and sub-national policies and develop detailed and adequately resourced implementation plans at the local level.

At present, adequately targeted investment is lacking. Existing multilateral funding is skewed towards mitigation rather than addressing the acute and growing threats already facing LMICs, with just 25% of international climate financing allocated to adaptation in 2019[15]. Furthermore, an assessment of major international climate financing flows revealed that, as of 2018, only 0.5% of multilateral funds were explicitly allocated to health projects[16]. To date, no health-specific projects are included in the list of funded initiatives on the Green Climate Fund website[17]. Financial resources and technical assistance need to be provided for an adequate health system response.

Article 9 of the Paris Agreement calls for balance in the allocation of resources to adaptation and mitigation actions according to national context, needs and development[18]. The concept of “balance” between mitigation and adaptation in climate policymaking referred to earlier in this commentary should also be carefully considered in the context of the COP26 Health Programme commitments. The commitments and their implementation should protect vulnerable communities from climate risks and address social justice by increasing the adaptive capacity across communities, including vulnerable groups. Furthermore, environmentally sustainable and climate-resilient health care systems could be protective against climate change, contribute to the equitable quality of care across the populations they serve, and create ripple effects across the sectors with which they interact, for example through their supply chains. To achieve this, further understanding is needed of whether specific mitigation or adaptation actions create synergies, co-benefits, conflicts, or trade-offs with each other. Then, contextualized risk assessments should inform this approach and identify priorities within adaptation and mitigation. The health policy and systems research community has extensive and appropriate expertise to build a health systems' mitigation and adaptation evidence base which requires adequate funding and engagement of cross-disciplinary researchers [19,20].

Finally, there is a need to combine the ‘top-down’ approach of the COP26 Health Programme with a ‘bottom up’ approach to the design, implementation and evaluation of policies. As part of the public policy and health policy discourse, the terms 'bottom-up' versus 'top-down' approaches to implementation are well known. Top-down approaches provide valuable international momentum and stem from globally relevant discourse. In contrast, bottom-up approaches crucially take the local, community-level needs up to decision-makers[21]. Bridging global movements and local perspectives is not only necessary for successful implementation but will in turn influence future global directions.

The COP26 Health Programme has created important momentum and has the potential to catalyse much-needed change. Following this, COP27 in Sharm El Sheikh will provide a unique opportunity to solidify and expand the commitments and put climate impacts and adaptation finance central to the global climate debate. It will also provide an opportunity for a broad review of progress towards the COP26 Health Programme commitments, but more defined accountability mechanisms must be established to ensure a transition from rhetoric to reality. Real progress will depend on year-round work: by governments to develop policies with the participation of all key stakeholders, by researchers to identify mitigation and adaptation solutions and disseminate findings, and by the health community at large to continue to amplify the links between health and climate change.

Table 1
Overview of the countries that made commitments as part of the COP26 Health Programme and any identified text related to these commitments in NDCs and adaptation communications (ADCOM). The cells are empty where no relevant text was identified [1,12].. NAP - National Adaptation Plan.

Country	CPO26 Health Commitments				Publication date (day/mo/yr)	Analysis	
	Climate resilient health systems	Sustainable low carbon health systems	Net zero commitment	Net zero target	For NCDs unless otherwise stated	Details relevant to commitments (adaptation)	Details relevant to commitments (mitigation)
Argentina	X	X			30/12/2020	A national health adaptation plan and specifically early warning systems are mentioned.	
Bahamas	X				31/10/2016	Includes a list of adaptation measures being planned or undertaken for the health sector, including awareness-raising and emergency management	
Bahrain	X				18/10/2021		
Bangladesh	X	X			26/12/2020		
Belgium	X	X	X	2050	ADCOM (EU) 07/11/2021	ADCOM (EU): At the EU level, the European Commission has launched the Climate and Health Observatory for related risk assessment, monitoring, communication, and prevention.	
Belize	X	X			01/09/2021	Actions listed to build adaptive capacity in the healthcare sector include a Climate Change Vulnerability and Capacity Assessment, management of disease vectors, early warning systems, investment in infrastructure, and public education awareness programme	
Bhutan	X	X			24/06/2021	The NAP process will feature in-depth sectoral assessments for sectors including health, and the NAP itself will include priority needs of the health sector	
Canada	X	X			12/07/2021		
Cape Verde	X	X			15/02/2021		The need to transition to renewable energy sources in hospitals and for sustainability of health care facilities is mentioned.
Central African Republic	X	X			11/10/2016	The importance of health sector adaptation is mentioned several times. Specific public health interventions include climate-related disease surveillance.	
Chile		X			09/04/2020	A focus on resilience of health systems is mentioned, and a health adaptation plan will be developed. A plan is mentioned to implement disaster risk management across the health sector.	
Colombia	X	X			10/12/2020	The planning of an early warning system, vector-borne disease analysis, and health systems vulnerability analysis is mentioned. A health adaptation plan will be developed, including implementation in the health sector. There is a general mention of building health resilience through prevention and health promotion. The need of building health resilience in the public health sector is mentioned.	
Costa Rica	X	X			29/12/2020	Increasing knowledge, monitoring and responses within the health sector are planned. Integrating adaptation within the health sector planning is identified.	
Dominican Republic	X	X			29/12/2020	The need for adaptation in the health sector is mentioned.	
Egypt	X				29/06/2017	Interventions in the health sector include identification of health risks, raising community awareness, increasing the ability of the health sector in dealing with climate change, and supporting Ministry of Health efforts to improve the social and economic status	
Ethiopia	X	X			23/07/2021	Ethiopia has an H—NAP. In addition, specific measures mentioned include surveillance and improvement in general and emergency services and reducing malaria and cholera	Improving access to safe energy sources such as solar and improving management of waste
Fiji	X	X	X	2045	31/12/2020	Specific 'Guidelines for climate-resilient and environmentally sustainable health care facilities in Fiji' are mentioned. The guidelines include specific planning for climate resilience and environmental sustainability objectives and indicators of the health system in Fiji.	
Germany	X	X			ADCOM (EU) 07/11/2021	ADCOM (EU): At the EU level, the European Commission has launched the Climate and Health Observatory for related risk assessment, monitoring, communication and prevention.	

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Table 1 (*Continued*)

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	Climate resilient health systems	Sustainable low carbon health systems	Net zero commitment	Net zero target	For NCDs unless otherwise stated	Details relevant to commitments (adaptation)	Details relevant to commitments (mitigation)
Ghana	X	X			04/11/2021; ADCOM 04/11/2021	Adaptation to climate-induced health risks, disease surveillance is mentioned. ADCOM: The NAP Framework is said to prioritise health as a climate-sensitive sector, and a climate change unit has been established in the health ministry. A national vulnerability assessment also included health. According to the adaptation communication, climate and health is also key component of the NDC. The Government has a national health adaptation strategy approved by a relevant government body and is currently implementing projects or programmes on health sector adaptation to climate change	There is a specific mention that the adaptation actions will be fuelled by renewable energy.
Indonesia	X	X	X		22/07/2021	Improved provision of basic health services and health sector adaptation included in National Medium-Term Development Planning. Specific interventions include addressing drivers of vulnerability to climate change impacts, enhanced stakeholder participation, enhanced community capacity in reducing health impacts, and community awareness-raising.	
Ireland	X	X			18/12/2020; ADCOM (EU) 07/11/2021	ADCOM (EU): AT the EU level, the European Commission has launched the Climate and Health Observatory for related risk assessment, monitoring, communication and prevention.	
Jamaica	X	X			01/07/2020		
Jordan	X	X	X		12/10/2021	Health included in adaptation plan, also has a National Climate Change and Health Adaptation Strategy and Action Plan with actions spanning those relating to improved understanding of risk and improved adaptive capacity.	
Kenya	X	X	X	2030	28/12/2020	An adaptation program including disaster risk reduction through early warning systems, prevention and response to droughts and flood risk management is mentioned. A vulnerability assessment is planned.	
Lao PDR	X	X			11/05/2021	The need for climate resilience in public health is mentioned, including the infrastructure and climate change-related impacts. Mentions a 'Strategy on Climate Change and Health Adaptation 2018 – 2025′ and 'action plan 2018 – 2020′. The strategy includes a detailed plan under ten components, including objectives and indicators.	The Ministry of Public Health is specifically mentioned, including a plan to ensure mainstreaming of climate change into their activities, including conducting studies research and promoting the use of environmentally friendly technologies that mitigate greenhouse gas emission and/or increase resilience to climate change.
Madagascar	X	X			21/09/2016	Multi-hazard warning systems	
Malawi	X	X	X		30/07/2021	Health is mentioned as a priority sector for NAPs, and preventive, treatment and disease surveillance measures are mentioned for malaria, diarrhoea and malnutrition	
Maldives	X	X			28/12/2020	There is a detailed focus on risk reduction and management.	
Morocco	X	X	X		22/06/2021	An assessment of health-related vulnerabilities has been carried out, with attention to emerging diseases and the increasing burden of existing ones. An updated national strategy for health sector adaptation was underway when the NDC was published, while another was already implemented. Plans are included to improve the knowledge and capacity of health professionals.	
Mozambique	X	X			04/06/2018		
Nepal	X	X			08/12/2020		There is a specific mention of moving from burning healthcare waste to other forms of waste disposal.

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Table 1 (*Continued*)

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	Climate resilient health systems	Sustainable low carbon health systems	Net zero commitment	Net zero target	For NCDs unless otherwise stated	Details relevant to commitments (adaptation)	Details relevant to commitments (mitigation)
Netherlands	X	X			ADCOM (NL) 30/09/2021; ADCOM (EU) 07/11/2021	ADCOM (NL): The National Adaptation Strategy includes a comprehensive approach to adaptation that integrates climate-resilient policies across all sectors, including health ADCOM (EU): At the EU level, the European Commission has launched the Climate and Health Observatory for related risk assessment, monitoring, communication and prevention.	The goal of the Green Deal on Sustainable Health is to work towards climate-neutral healthcare. This means net-zero emissions and the circular use of resources, such as more sustainable use of water supplies.
Nigeria	X	X	X		30/07/2021; ADCOM 21/10/2021	Mentions building capacity to integrate climate issues into the health sector and health agencies, and training women community nurses to address climate change related diseases ADCOM: The health sector is given prominence in Nigeria's adaptation planning, with measures including strengthening disease prevention and treatment for those diseases expected to increase as a result of climate change, establishing early warning and health surveillance programs, and strengthening the adaptation strategy for the health sector.	
Norway	X	X			07/02/2020		
Oman	X	X			29/07/2021	Health is mentioned in the context of GCF funding, most likely linked to adaptation. Opportunities for improved climate resilience have also been identified for public health, and barriers to achieving resilience are mentioned.	
Pakistan	X	X			21/10/2021	Health is one of the sectors prioritized for inclusion in the climate change adaptation agenda, including research, disease surveillance, multisectoral collaboration, and emergency planning.	
Panama	X	X			28/12/2020	In its NDC, Panama commits to expand the planning instruments to reduce the vulnerability of the population through the development of its Climate Change Plan for the Health Sector, focusing on strengthening systems of epidemiological surveillance with environmental risks and climate risks	Emissions reductions in the health sector are also briefly mentioned in relation to public, private and civil society entities.
Peru	X	X	X	2050	18/12/2020	Health is mentioned as a priority area in adaptation.	
Rwanda	X				ADCOM: 29/10/2021	A standalone health adaptation plan is mentioned. ADCOM: Rwanda has assessed the vulnerability of the health sector to climate change, including risk of waterborne and vector-borne diseases, flood/landslide mortality and damage to land, infrastructure and household assets and displacement	
Sao Tome and Principe	X	X	X		30/07/2021		
Sierra Leone	X	X	X		31/07/2021	The National Framework for Climate Services (NFCS) will benefit a wide range of sectors and climate intervention areas, including health. Some priorities include improving health delivery services, improving supply of safe drinking water and sanitation, increasing funding to the health sector, development of an early warning systems, strengthening meteorological and hydrological institutions, providing coastal infrastructure, improving sanitation, amongst other actions.	Waste management from the health sector is considered alongside other sources of waste.
Spain	X	X	X	2050	ADCOM: (ESP) 28/10/2021; ADCOM (EU) 07/11/2021	ADCOM (ESP): Public health is identified as a key issue for adaptation, and specific measures are in place for heat. In addition, under the national adaptation plan, a catalogue of experiences and good practices in public administrations and companies in relation to health adaptation measures. ADCOM (EU): At the EU level, the European Commission has launched the Climate and Health Observatory for related risk assessment, monitoring, communication and prevention.	

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Table 1 (*Continued*)

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	Climate resilient health systems	Sustainable low carbon health systems	Net zero commitment	Net zero target	For NCDs unless otherwise stated	Details relevant to commitments (adaptation)	Details relevant to commitments (mitigation)
Sri Lanka	X	X			24/09/2021	Health is mentioned in the list of sectors for which adaptation and resilience is being prioritised, and interagency coordination for early warning on climate and weather-related disasters and health emergencies is mentioned in the context of access to water. Health sector adaptation measures cover policy level initiatives to mainstream targeted climate resilience actions, improved capacity to manage climate influenced health and disease conditions, addressing air pollution related health impacts and reduce morbidity and mortality from climate induced disasters.	It is mentioned that as part of the COVID-19 recovery, the health system will be enhanced, digitalized and waste management will become more sustainable.
Tanzania	X	X			30/07/2021	Adaptation measures in the health sector include promoting climate-resilient public health system and infrastructure, surveillance and early warning systems, and vulnerability and risk assessments.	
Togo	X	X			12/10/2021	Adaptation is considered within the health sector at the national level, and particular emphasis is placed on improving resilience and responses to infectious disease. A vulnerability and adaptation assessment for the health sector has been completed.	Solar electrification of 314 health centres and equipment of 122 health centres in solar water heaters, mentioned as part of adaptation yet also contributes to mitigation.
Tunisia	X				10/10/2021	The NDC mentions the need to control the health risks linked to climate change and integrate their management supported through a more resilient health system with adequate human resources and integrated attention to gender, as well as strengthening the role of health in leadership and collaboration cross-sector approach to climate change and promote applied research. In addition, the NDC mentions specific interventions such as surveillance and early warning systems and evaluating the effectiveness of health interventions and systems in different climatic conditions.	
Uganda	X	X			12/10/2021		
United Arab Emirates	X	X			29/12/2020	A health climate risk assessment is mentioned. Specifically, adaptation to heat is mentioned. A policy and action plan on health and climate change is planned, including a specific mention to train health personnel to deal with risks posed by climate change.	
United Kingdom	X	X	X	2040	ADCOM 19/10/2021	ADCOM: The second UK Climate Change Risk Assessment (CCRA) and the Third Strategy for the Adaptation Reporting Power include health considerations / the health sector. Health adaptation and resilience measures are listed for England, Wales, and Scotland. As part of the NAP, Public Health England (PHE) will widen the scope of existing plans by developing new adverse weather and health plans, which will cover heatwave, cold weather, flooding, and other weather-related hazards. The UK seeks to improve the resilience of its health system through the systematic assessment of its vulnerability to climate change, addressing these vulnerabilities through actions in the NAP. Since April 2017, the National Health Service (NHS) has been working to understand and address overheating risk in mandatory Green Plans. Vector Surveillance efforts are also underway.	
United States of America	X	X			22/04/2021		
Yemen	X	X	X		No NDC		

Contributor's statement

The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted. IMB initiated the study. All authors contributed to the design, writing, reviewing, and editing of the study.

Declaration of interests

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Declaration of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Amanda Quintana – None.

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