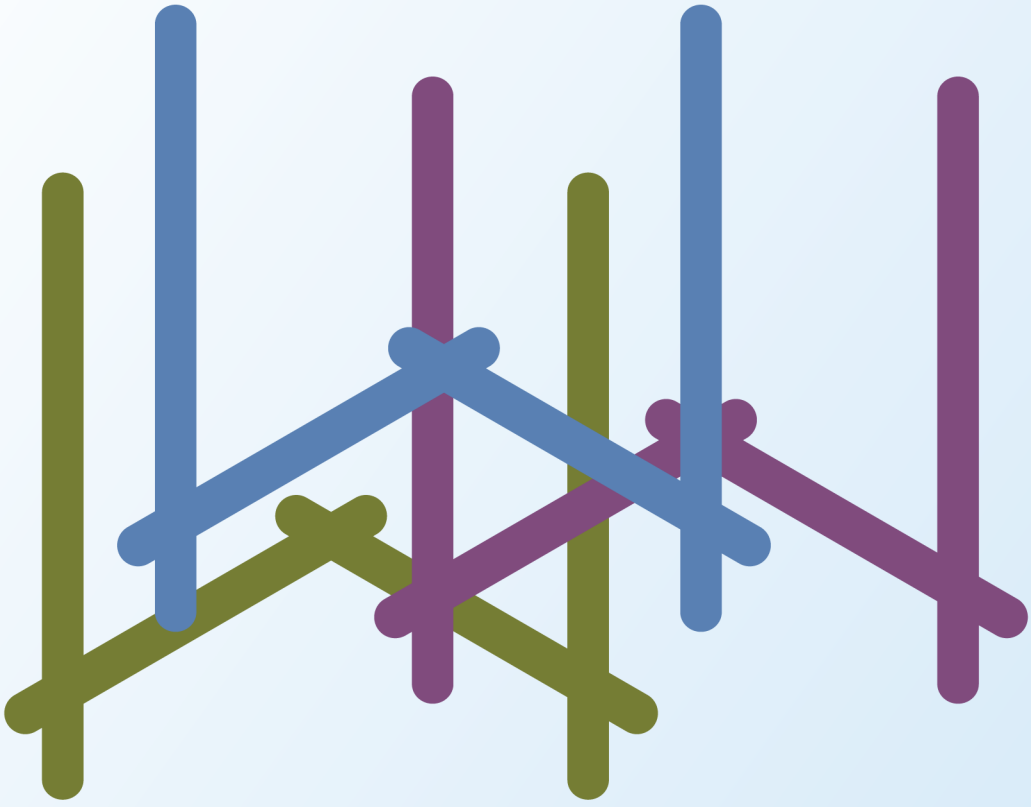
PMAC | PRINCE MAHIDOL AWARD CONFERENCE 2022

THE WORLD WE WANT

Actions Towards a Sustainable, Fairer and Healthier Society



PMAC 2022

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THE WORLD WE WANT

ACTIONS TOWARDS A SUSTAINABLE,FAIRER AND HEALTHIER SOCIETY

| INTRODUCTION

As we enter the third decade of the 21st century the world has been shaken at its economic, political, and social core by a series of convergent and interrelated events - the COVID-19 pandemic, the growing impact of climate change, and the rapidly growing economic inequalities between and within nations. They have led to calls for re-thinking the future of human societies in ways that will result in a fairer, healthier, and more sustainable world.

The 2022 PMAC theme – "The World We Want: Actions Towards a Sustainable, Fairer and Healthier Society", aims to take a long view by focusing on the 'mega trends' that will shape the rest of this century and the complex interplay between them, including how they are already reshaping our global health landscape. PMAC 2022 will consider how the experience of the COVID-19 pandemic is impacting the geopolitics of global health, implications of key shifts in the makeup of the world's population, the opportunity gains and threats of exponential technological change, and that most urgent of ticking clocks the imminent and evolving threats to global health and wellbeing posed by climate change.

| PREPARING FOR FUTURE PANDEMICS

While in the summer of 2021 some rich countries have had access to vaccines with robust immunization programs and are near to achieving herd immunity (Israel, Canada, UK, US), the story is completely different for the vast majority of the world's population. In low- and middle-income countries (LMIC), fewer than 1 percent have been vaccinated with little expectation that vaccine coverage will be widely available through 2022. In the absence of widespread vaccination coverage SARS-CoV-2 variants will remain a significant threat to those gains already achieved. The issue of equitable access to COVID-19 vaccines and treatment technologies is crucial and poses massive questions for the global community about equitable provision of access to health care and the conditions for health and wellbeing.

The role of political leadership has emerged as vital in determining pandemic responses. COVID-19 is unlikely to be the last pandemic or health crisis that the world faces, especially as deforestation, biodiversity loss, and climate change increase the risk of further spillover of zoonotic diseases. Therefore, this pandemic should serve as an inflection point for the international community to cast aside what the World Health Organization (WHO) has called the "the panic then forget" cycle, which has been emblematic of previous international responses to global health emergencies. Preparing for the next pandemic requires building the systems, capacities and partnerships that can better anticipate, prevent and respond to emergent threats. Ultimately, multi-sectoral approaches are needed to address the challenges of epidemics and pandemics. These should include addressing the root causes of spill-overs and spread – inclusive of environmental degradation and sustainable agriculture, and in parallel intensifying investments in robust and resilient health systems and conditions of everyday that support health.

| ENVIRONMENTAL DEGRADATION, GLOBAL WARMING AND THE ENSUING CLIMATE CRISIS

The human-created and destructive impacts on many of the environmental systems on which human health and life depend can be characterized by ecological 'overshoot', in which population demands on ecosystem resources exceeds the capacity for resource regeneration, with climate change posing the most immediately critical health-related threat. As one example, particulate air pollution (associated with fossil fuel consumption and greenhouse gas emissions) is responsible for three times as many deaths annually as HIV, malaria, and tuberculosis combined. Despite 25 years of efforts to implement the United Nations Framework Convention on Climate Change (UNFCCC), through its two agreements and one protocol, CO2 emissions continue to increase rather than stabilize or decline. The election of US President Biden has given a boost to efforts to establish more ambitious carbon reduction targets but a secure climate future is far from assured. Unless the UN Climate Change conference in Glasgow in October-November 2021 (COP26) leads to a global agreement to reduce global warming to 1.5 degree in order to reach global zero emissions by 2050, the climate scientists are warning of the high probability of a planet that is increasing inhospitable for human and most eco-systems. Given the urgency of action on climate change, a quarter century of slow or no substantial prevention or mitigation attests to crises in effective global governance, with concern that the slow decline in multilateralism will worsen the situation.

| THE WAY FORWARD

Over the course of the remainder of this century, the dual threats posed by emerging infectious diseases and climate change will continue to increase, driven to a large extent by ongoing demographic trends and their impact on global ecosystems. Further exacerbating the consequences of these trends are persistent social and economic inequalities that shift the burden of their impact on the economically disenfranchised, displaced populations and people living with pre-existing conditions.

Complicating the ability of nations to mount an effective response to COVID-19 pandemic and climate change has been the erosion of support over the past decade for multilateral institutions and partnerships, a growing mistrust between citizens and their leaders, and the rise of "anti-science". We need to thoughtfully examine the causes underlying these trends, including the expanding impact of social media, if we are to develop new strategies to re-invigorate our commitment to multilateral partnerships, build more trustful relationships between governments and their citizens, and re-affirm the centrality of evidence-based solutions to future threats.

| PMAC 2022: THE WORLD WE WANT

There are competing views of what our world could look like in 2100. Should the ambitious Sustainable Development Goals and the Paris Climate Accords be achieved, some predict a world in which we are; already winning the battle against climate change by reducing CO2 levels down, where embracing sustainable agriculture and renewable energy reverses the disruptive impact on the ecosystem reducing the threats of future pandemics, where urban design favors cities that are walkable ensuring air pollution levels are under control and where alternative environment friendly transit public transit is available. A world where a circular economy is flourishing, reducing the burden on global resources, and a new kind of global economy takes root, with an overhaul of economic policy to consider broader societal impacts rather than GDP alone. A world where old age care starts when you're young with a life-course perspective and precision medicine is accessible to everyone, not just the rich. A world where citizen participation in policy making and institutional governance is enhanced and welcomed as an essential step to more democratic and representative governance in local, national and global fora and institutions. Where the ubiquity of technology empowers human minds across the globe, where digitech helps close the gender and wealth gap.

Across most of these alternatives of a virtuous future is an acknowledgment that global governance and favorable geopolitics is a crucial enabler – that the global challenges facing humanity are transnational in nature and trans institutional in solution, where no single government or international organization or other form of institution acting alone can solve the problems described. Global foresight needs to inform global-scale decision-making in order for global governance to keep up with global interdependence.

In that spirit, and in the race to identify ever-increasing ways to improve the human condition despite the ever-increasing complexity and scale of global challenges, PMAC 2022 aims to convene futurists, academics and experts from the fields of global governance, international relations, demography, nutrition, political economy, climate, and technology alongside private sector and global health experts, to take a long view. In so doing, PMAC 2022 is a curtain raiser for future years and future PMACs, that will delve more singularly into megatrends raised here, to ensure the global health vision and global health community use these megatrends to inform and shape possible alternatives for global transformation for health and equity through the 21st century - For the World We Want.

Sub-Theme 1

The World We Want: Megatrends and Futuristic Point of Views

SUB-THEME 1

INTRODUCTION

The world has been shaken at its economic, political, and social core by the COVID-19 pandemic. The impact of the pandemic has led to calls for re-thinking the future of human societies in ways that will result in a fairer, healthier, and more sustainable world. Recognizing that the pandemic is not the only crisis facing humankind, other mega trends equally as important to consider in any rethinking of future directions are:

- Rapidly growing economic inequities within and between countries
- A pandemic of non-communicable diseases
- Population, migration and refugees
- Advocacy of new approaches to economics
- Changing geopolitical relations, decline of multilaterialism, and increased risks of regional and international conflicts
- Growing technology inequalities
- The need for strengthened health systems

Together these mega-trends have created an unstable world which is more open to health and other crises.

AGREED GOALS FOR THE FUTURE

The world has also adopted seventeen goals - The Sustainable Development Goals (SDGs) – which have given us a vision of where the world should be by 2030. The 17 SDGs are: 1) No poverty 2) Zero Hunger 3) Good Health and wellbeing 4) Quality Education 5) Gender Equality 6) Clean Water and Sanitation 7) Affordable and Clean Energy 8) Decent work and Economic Growth 9) Industry Innovation and Infrastructure 10) Reducing Inequality 11) Sustainable Cities and Communities 12) Responsible consumption 13) Climate Action 14) Life Below Water 15) Life on Land 16) Peace, Justice and Strong Institutions 17) Partnerships for the Goals.
Further to these goals the United Nations has also endorsed the goal of Universal Health Coverage (UHC) which include

- equity in access to health services - those who need the services should get them, not only those who can pay for them;
- that the quality of health services is good enough to improve the health of those receiving services; and
- financial-risk protection - ensuring that the cost of using care does not put people at risk of financial hardship.

Many also envisage that UHC will only be achieved through the provision of public services based on comprehensive primary health care1. In addition, there is some agreement (the Paris Accord) that global warming must be kept below two degrees Celsius compared to pre-industrial levels. While there is some denialism regarding climate change there is primarily a strong and growing consensus on the target and the need for strong action to achieve it.

BACKGROUND TO THE MEGATRENDS THAT WILL BE COVERED IN THIS SUB-THEME

This section summarizes the relevance of sub-themes 2 & 3 as they are an important backdrops to envisaging the world we want in the future.

Handling future pandemics

While in May 2021 some rich countries have had access to vaccines with robust immunization programs and are near to achieving herd immunity (Israel, Canada, UK, US) the story is completely different in many LMIC. In India, Brazil and the Philippines in May 2021 the pandemic was raging and new variants emerging. The issue of equitable access to COVID-19 vaccines and treatment technologies is crucial and poses massive questions for the global community about equitable provision of access to health care. The role of political leadership has emerged as vital in determining pandemic responses. There is also evidence that the pandemic has led to an increase in gender-based violence. The pandemic has underlined the importance of strong public health systems which are free at the point of use.

Environmental degradation, global warming and the ensuing climate crisis Increased risk of pandemics

A trend that underpins all the others is the human-created and destructive impacts on many of the environmental systems on which human health and life depend. This is characterized by ecological 'overshoot', in which population demand on ecosystem resources exceeds the capacity for resource regeneration, with climate change posing the most immediately critical health-related issue. As one example, particulate air pollution (associated with fossil fuel consumption and greenhouse gas emissions) is responsible for three times as many deaths annually as HIV, malaria, and tuberculosis combined. Despite 25 years of efforts to implement the United Nations Framework Convention on Climate Change (UNFCCC), through its two agreements and one protocol, CO2 emissions continue to increase rather stabilize or decline. The commitment of the European Union and election of US President Biden has given a boost to efforts to establish more ambitious carbon reduction targets, but a secure climate future is far from assured. Given the urgency of action on climate change, a quarter century of slow or no substantial prevention or mitigation attests to crises in effective global governance, with concern that the slow decline in multilateralism will worsen the situation. The recent G7 meeting in the UK did make some commitments to climate action but commentators[2] have seen the commitments as not going far enough. Other multilateral meetings happening in 2021 are G20 (Saudi Arabia, November 2021), and OECD (tax reform) and the COP26 in Glasgow (November 2021). While Climate change is the focus of sub-theme 2 addressing this crisis is critical to the ability to achieve the vison in this sub-theme.

MEGA TRENDS THAT WILL BE THE FOCUS OF SUB-PLENARY 1

Rising economic (including wealth) inequities

The first mega trend we will examine is the continued rise in economic and wealth inequities, first noted in the 1980s and early 1990s and which has accelerated since. Not only are such inequities associated with slowing, stagnating, or inequitably distributed health risks; their impact on social stability and potential to create national and regional conflict is now widely accepted as one of the major concerns facing humanity. The issue of rising inequity is a cross-cutting issue and relevant to mos of the other issues PMAC 2022 will be considering including climate change, income security, working conditions and health. World Bank data indicate that in most countries in the world wealth distribution as measured by the Gini co-efficient are becoming less equal[3].

There are many reasons for this dramatic rise in wealth/income inequities but most of them pertain to policy decisions governments have made over the past four decades in which neoliberal economic theory predominated. Since the 1980s the share of global economic product going to labour has declined substantially while the share to capital (investors, TNCs, etc.) has increased so contributing to the widening inequities. A further reason has been the declining share of GNI within countries being captured by taxation for redistribution through cash transfers and/or investment in public programs, including health and social protection. Some countries, notably in LMICs, are now increasing taxation (measured as a portion of GNI) that could sustain or improve financing for health and other social protection programs. Their low levels of economic output (GNI), however, means that even with improved and progressive taxation many LMICs will be unable to finance adequate social safety nets in keeping with the SDG targets without external forms of financial assistance. Moreover, the impacts of the pandemic on the global economy will reduce considerably growth and taxation potential for many of these countries.

At the same time, countries' tax/transfer capacities remain constrained by the hypermobility of capital, continued international tax competition, and a growth rather than reduction in offshore financial centres ('tax havens'). Huge amounts of wealth and income continue to avoid or evade taxation and redistribution or public investment for public good purposes. There have, however, been considerable efforts to reduce these practices in recent years since the publication of the Panama Papers which revealed the extent of tax evasion.

During the COVID-19 pandemic the wealth of the world's richest individuals increased dramatically. The wealth of the richest people in the world have boosted their already vast wealth by more than $400bn (£296bn) since the coronavirus pandemic began as their businesses benefited from lockdowns and financial crises across the globe. –Some transnational pharmaceutical companies are making large profits from the sale of vaccines. Pfizer announced that it expects $26 billion in COVID vaccine sales this year while also refusing to share any significant vaccines with low and middle incomes countries[4,5].Reversing the trend towards increasing inequities is vital to a healthy and fairer future.

A pandemic of NCDs

The rise in non-communicable disease in all countries regardless of income has reached the proportions of a pandemic [6]. WHO reports that 71% of all deaths are a result of NCDs. The vectors of NCDs concern social and commercial determinants of health. NCDs have increased as the marketing of products such as high sugar content drinks and the design of cities which encourage low exercise. This means we have car dominated cities, unwalkable neighborhoods, marketing and consumption of fast foods and weak social ties. While NCDs have been called "lifestyle" diseases, putting the onus for change on individuals, these "lifestyle' choices" have deep roots in unhealthy systems. Thus, reducing their impact will require system change. These changes would include the on-going struggle to establish effective public health systems which are based in comprehensive primary health care. Such community-based care would be able to work to reduce NCDs in communities including by identifying and advocating for change to the social and commercial determinants. These systems would also be helpful in handling future epidemics of infectious diseases.

The cost-effective health promotions and disease prevention should be addressed in the future plan to tackle NCDs. Effective health promotion and disease prevention interventions should also address both proximal and distal determinants of ill health of the population in terms of both issue based and setting based determinants (such as, for issue based, sedentary life style, unhealthy eating, tobacco and alcohol uses [7], along with setting based, such as, aging society and vulnerable population).

Population, migration and refugees

Global life expectancy has risen by more than a decade over the last 40 years to reach 73.2 years. It is also projected to increase in every country over the next 40 years, according to the United Nations, as mortality improvements shift from childhood to later ages. However, in some high income countries including the US and UK life expectancy is stalling and has declined for some low socio-economic groups[8,9]. Population ageing and fertility decline are key trends when considering how to make the world sustainable in the context of COVID-19. Older people constitute the large majority of deaths due to COVID-19. The pandemic has also powerfully revealed the importance of public health and the value of preventive medicine. It has dramatically exposed the social determinants of health and the stark inequities of those most impacted by disease, from health, social, and financial perspectives. Highlighting the importance and urgency of investing in healthy ageing. The pandemic has also had significant and substantial impacts on fertility behaviours including substantial fertility decline in high-income settings, and increased numbers of unwanted pregnancies in low-income settings. Planetary overpopulation continues to threaten ecological sustainability.

More people are on the move than at any previous point in human history. Much of this movement is internal migration, often rural to urban or internal displacement. Some is facilitated international migration, but an increasing amount is forced migration (in response to conflict, environmental degradation, and threats to livelihoods), while some involves asylum seeking or refugee claimants as defined under international law[10]. The rise in forced (informal) migration has increased its criminalization and dangers, the erection of border barriers (including armed walls), the creation of huge settlement camps (particularly in LICs where most forced migrants are located), and politically motivated racist rhetoric by some of the world's most powerful leaders fomenting increased xenophobia and hate crimes. There are a declining number of countries willing to take refugees. Some countries cautiously accept refugee claimants and asylum seekers. But over 65 nations are taking measures to exclude refugees, those 66 million international migrants whose flights from their homelands are considered to be 'forced' by immiseration, drought, conflict, or all three. Tens of millions more become internally displaced, housed in massive refugee camps located in LMICs that lack the resources to provide for them. The conditions in these camps makes the pandemic spread more likely: crowded conditions, limited water or sanitation facilities, and no intensive care for those with severe COVID. With wealthier donor countries are reducing foreign aid budgets to cope with their own domestic

pandemic bailouts or recoveries, cuts to food aid are leading to extreme hunger for those trapped within refugee camps[11]. The threats to the health of these migrants are clear.

HICs with an aging population are sometimes urged to accept more migrants from LICs with a youthful population based on a 'win/win' argument: reduced population pressures and poverty in LICs and a replenished working age portion of the demographic pyramid in HICs. This argument is based on conventional economic modelling of dependency ratios (the number of older people [aged > 60 or > 65]/ the number of working-age adults [aged 15–64]). The WHO Global Report on Ageing [12]notes this conventional modeling is ageist as it assumes that all older people are dependent. In low-income countries, for instance, approximately 50% of those aged 65 years and over are in the labour force. In the G7 countries, in the decade before COVID-19, people aged 50 years and over drove 100% of employment growth.

Declining employment options and the requirement for a continuous growth in working age population to sustain an expanding older population question its longer-term relevance or ecological sustainability. UN-led efforts to seek agreement on a 'managed migration' compact remain tenuous[13]. Post-COVID-19, when growth will be needed, a focus on healthy ageing to achieve a longevity dividend needs to be a priority. The UN has declared the decade from 2021- 2030 The Decade of Healthy Ageing[14].

New economic paradigms

Challenges to the dominant 'growth' oriented global economy are not new but are gaining a new urgency in the face of unsustainable patterns of growth. Some of the alternative models that have been proposed include: steady state economics[15] 'doughnut' economics'[16], in which financial policies and practices should be assessed for their human socio-health and ecological 'overshoot' impacts (similar to a Health in All Policies approach); policies to promote circular economies[17], in which waste is reduced and resources continually reused to minimize environmental impacts; and 'glocalization', a concept that emphasizes forms of local production/consumption, local exchange currencies, and producer cooperatives to improve democratic accountabilities and lessen environmental damages. Modern Monetary Theory has also challenged the idea that government debt is necessarily bad and in fact is important to nation-building activities. Collectively, such ideas are sometimes referred to as 'degrowth' economics, and often include incorporation of new national account measures based on human wellbeing, 'prosperity', and/or a sustainability development index rather than on GNI growth per se. The health impacts of different economic systems need to be assessed as a part of their value[18].

Changing geo-political relations and decline of multilateralism

Shifts in the distributions of political and economic powers amongst countries and regions are outcomes of post-1980s globalization. Enabled by trade and investment liberalization agreements originally led by the World Trade Organization (WTO), economic interdependencies between countries increased. The 1990s through the early 2000s were characterized by the creation of global production chains, increasing employment and economic growth in many low- and middle-income countries (albeit unequally distributed) while decreasing manufacturing and services employment in many high-income countries. Increased liberalized financial flows and under-regulated derivative investments and banking rules increased macroeconomic instabilities, culminating in the 2008 global financial crisis. Concerns with rising government debt partly consequent to the 2008 crisis led to widespread fiscal austerity that replicated many of the requirements of earlier IMF/World Bank structural adjustment programs. Past and present fiscal austerity measures, either as conditions on new IMF loans to governments or undertaken voluntarily, have negative health impacts, particularly in low- and middle-income countries (LMICs), but also in high-income countries (HICs), and for poorer populations within countries. Economic growth globally, and in most countries, has slowed considerably since 2008, creating economic and political uncertainties. The COVID-19 pandemic has created new threats to prosperity and threatens to see countries going backwards in terms of meeting the SDGs by 2030. The rate and direction of economic change has led to a rapidly growing area of enquiry – the commercial determinants of health which examines the ways in which business interest, especially trans-national corporations have a negative impact on health. The size and power of transnational corporations also continues to increase; 78 of the top 100 economic entities are now TNCs.

The first, and most notable, outcome of geopolitical shifts in economic and political power and influence has been a slow

erosion in the multilateralism that has characterized global governance. In the face of sluggish economic growth and increasing competition for consumer markets, multilateral trade rules are being supplanted by bilateral and regional trade and investment agreements in which more powerful states are able to negotiate rules that favour their economic or political interests. Regional agreements, such as the new African Continental Free Trade Agreement (AfCFTA), could lead to more equitable development outcomes, although much will depend on the extent to which such agreements emphasize social and political development and not just commercial/economic growth. A further issue is extent to which the asymmetries in power and size between countries in regional agreements are explicitly managed in the texts of such agreements. An on-again/off-again trade war between the USA and China is becoming a defining geopolitical feature with implications for the economic stability (or instability) of many of the world's countries, and how this might 'trickle down' to affect health and health systems.

Growing technology inequalities

Past history shows that global disasters on the scale of the COVID-19 pandemic bring a huge imperative for innovation[19]. This pandemic was the first where the rapid deployment of technology, and specifically digital technology, became a core component of the race to understand, contain and deliver a potential solution.

It was an artificial intelligence (AI) algorithm that first alerted much of the world to COVID-19 on 31 December 2019 and went on to successfully predict 10 of the first 12 cities to be impacted.[20] Primary care and outpatient hospital care had long held the promise that they could largely be delivered digitally but COVID-19 precipitated this with many countries forced to adopt a digital-first approach. The vaccine industry underwent a paradigm shift in technology delivering a viable mRNA vaccine within one year when previously timelines had been closer to one decade.

Some of these technologies are likely to evolve to play a permanent role in health beyond COVID-19. New vaccine technologies have the potential to revolutionise how humans fight infectious disease and offer potential solutions for other huge killers, such as malaria, which have so far eluded us. Telehealth can make care more efficient and coordinated and has the potential to bring expert care to underserved areas of the world. AI can help us prevent the next pandemic and develop new and more effective treatments.

Despite the progress, almost most half of WHO member countries do not have a health technology policy and lack of standards for data protection, privacy and security as well as the conditions for data sharing risk slowing or reversing progress.[21]Whether the technology trend from COVID continues depends on the role of governments in leading, empowering and regulating technologies.

Ultimately, these technologies have the potential to accelerate the achievement of the SDGs and the world we want for many but also risk driving further health inequity by excluding those who don't have access to them, either due to cost, access or knowledge.

The need for strengthen health systems

Increasing the ability for a health system to withstand and effectively respond to shocks and stressors is critical to achieving a position from which to address effectively to future pandemics and to maintaining progress to date on the world's global health goals. To be resilient, health systems must be flexible enough to adjust resources, policy, and focus in response to constantly emerging challenges. USAID[22] recognizes the need to build resilience to acute, time-bound events such as disease outbreaks, as well as to longer-term dynamics such as protracted population displacements, weak government authority or legitimacy, population pressure, social exclusion, and climate variability. The type, intensity, and number of overlapping shocks and stressors cannot always be predicted, but the fact that there will be shocks and stressors can. In many countries, health systems are unprepared for these inevitable events, whether unexpected external crises or internal governance challenges such as shortages, or payment delays.

Primary Health Care (PHC) is vital to the task of building strong health systems. The exact nature of PHC is a matter of debate. WHO has recently revitalized its support for PHC[23] and while this was widely welcomed some flaws have been

highlighted [24]as the Astana Declaration does not see PHC as an organizing principle for a health system and as having a role in supporting and advocating for intersectoral action. Further the critique noted that the positioning of PHC as part of Universal Health Coverage it supported private sector activity which was often likely to be too the detriment of a strong public health system. The importance of strong public health systems has been shown in many ways during the COVID-19 pandemic[25].

UNAID's recent paper on health systems in 2030 has describing them as having to be absorptive, adaptive, and transformative in order to cope with times of crisis Absorptive capacity relates to the existing ability of a health system to take intentional protective action and to maintain stability in the face of known shocks and stressors to prevent or limit negative impacts. Adaptive capacity is the capacity of the health system to make incremental and flexible adjustments in order to better manage a changing environment while improving overall system performance. Finally, transformative capacity refers to the ability of the health system to make fundamental functional and structural changes that address underlying challenges and contextual dynamics which impact performance and progress toward health outcomes. Other work has stressed the importance of effective community participation in the design of health systems[26] and the need to build strong public systems that are most effective at ensuring equitable access and outcomes. The importance of community health workers[27,28] is also evident.

OBJECTIVES

- Examine- from different perspectives – how the vision of a healthy, fair and sustainable world can be achieved for current and future generations
- Examine the varying theoretical and ideological base underpinning these
- Outline the most likely pathways to achieving the vision over the next decades

ISSUES TO BE ADDRESSED

Nearly everyone and most organisations agree with the SDGs and the Paris targets on global warming. They offer a comprehensive vision for the world. However, there is considerable disagreement about how these goals are to be achieved. These disagreements are likely to have shifted over the course of the COVID-19 pandemic. The pandemic has opened up a bigger space in which to envision different ways of achieving the SDG and climate goals. Broadly speaking there are three categories of responses to the question of how to achieve the SDGs which are evident in national and global debates. These can be represented on a continuum.

- Whole sale change is required which means questioning the extractive basis of capitalism
- Need to change business as usual a little by being more green and redistributive
- Business as usual: Neo-liberal economics that relies on trickle down effects

Figure 1: Continuum of responses to Pandemic recovery

On the left there are increasingly vocal calls for a rethink of the capitalist world which relies on historical and contemporary extraction of resources and their use to benefit a small number of increasingly rich people and corporations. This view points to alarmingly growing levels of inequities in wealth both within and between countries. Rather than trickle down to help the many, see a concentration of wealth at the top. The vision is based on degrowth and non-consumerist models of economic activity, taking into account the need to improve healthful levels of consumption for the world's (still too many) poor via global redistributive systems while dramatically reducing consumption levers of higher-income countries and individuals. This vision is associated with calls for gender equity and recognition of the rights of all citizens to a healthy and adequate livelihood. It also offers a variety of visions for alternative economic systems which are typically decentralized and democratic. Transnational corporations are seen to have prospered and grown under capitalism to the extent that their power and wealth is a rival to democratic government. This perspective also points to the failure of privatized systems to cope with the pandemic especially in regard to health systems. This view promotes democratic political system which are responsive to the needs of people.

On the right there are calls to support the existing model of capitalism and maintain it by giving subsidies to industry and continue the privatization of functions that were previously those of the state. This view continues to see the value of market economics and argues they are the best basis for democracy. It sees continued growth as desirable and possible. This view regards taxation as an impediment to business and so favours very low taxation. The aim of this model is to whittle away welfare states where they exist and oppose their development where they don't. Extreme versions of this view see the state itself withering away and social organization being left to markets. Transnational corporations, including those based on high

carbon emissions, are viewed favorably and seen as valuable as they provide the goods and services people desire.

The responses in the middle of the continuum accept the capitalist model but also believe it needs to be tempered by measures which will make it less likely to contribute to global warming and environmental destruction. It also believes that redistributive measures are required. This view will support measures to encourage renewable energy, recycling schemes and promote business adopting carbon targets. This response would support the welfare state and some universal public sector functions including education and basic health services provision. During the pandemic many high-income governments did extend more generous welfare schemes to either keep people in jobs or increase the support they received.

Much debate in global health continues without recognition of the values and beliefs that undermine different visions of how societies should be organized to promote health and wellbeing. Our aim in this session is to examine the different assumptions underpinning the ways in which countries should build back from the COVID-19 pandemic.

Any approach to improving health and health equity in the future will be based on a multi-sectoral approach and envisaging such a future will require engaging people from different sectors including urban planning, transport, communications, energy, trade and foreign affairs, finance (treasury), food and agriculture and technology.

The consideration of the future in this sub-theme will be concerned with national and supra-national levels:

1. How countries can build fairer, healthier and more ecologically sustainable societies
2. Supra-national: governance for health, international co-operation outside of country boundaries with the aim of minimizing unhealthy nationalism

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Sub-Theme 2

The World We Want: Scaling up Efforts to Address Climate Crisis and Building Forward Greener

SUB-THEME 2

CONCEPT: THE CONVERGING CRISES OF CLIMATE, ENVIRONMENT AND HEALTH

The converging crises of climate, environment and health are megatrends that present current and future threats to our planet and population. There is a need for multisectoral and interdisciplinary collaboration between countries and actors to unite in political solutions. Joint accelerated efforts to tackle the climate crisis and recover from the COVID-19 pandemic are crucial. Measures taken to address both of these public health crises must be examined carefully, given their strong connection.[1]

"The pandemic is a reminder of the intimate and delicate relationship between people and planet. Any efforts to make our world safer are doomed to fail unless they address the critical interface between people and pathogens and the existential threat of climate change, that is making our Earth less habitable".

However, not all actors contribute to these converging crises similarly, and inequality remains a core issue. The top 10% of the emitters generate around 45% of flobal greenhouse gas emissions, while the bottom 50% only generate 13%. According to numbers from 2017, 100 companies are accountable for 71% of the world's total greenhouse gas emissions. Only a handful of transnational companies dominate areas that are significant drivers of environmental change and biodiversity loss, such as agriculture, forestry and fisheries.[2,3] Notably, food consumption is the single most significant driver of environmental pressure load accounting for 80% of land conversion and biodiversity loss, contamination of freshwater and coastal ecosystem, 80% of freshwater consumption and contributing 20-30% of global greenhouse emissions.[4,5] How can we create rights-based systems of equal distribution that, at the same time, battle the converging crises of climate, environment and health?

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COVID-19 AND THE COMPOUND RISKS

The COVID-19 pandemic has hit the world severely, causing death and suffering to millions of people. And while the world is trying to tackle the pandemic, global warming continues, often interacting with other megatrends[6]. According to the WMO's State of the Global Climate, 2020 was one of the three warmest years on record, with indicators such as greenhouse gas concentrations, increasing land and ocean temperatures, sea-level rise, melting ice and glacier retreat and extreme weather.[7] Climate change affects socio-economic development globally (according to EU numbers, this implies a loss of more than 12bn Euro per year within the Union only), land and marine ecosystems, economy, food, security, trade, migration, health and wellbeing.[8] According to the planetary boundaries framework, we have already transgressed at least four boundaries: climate change, land conversion, nitrogen and phosphorous loading, and biodiversity loss. The human population has driven the planet into the Anthropocene: the first geological epoch shaped by human activity.[9]

It is estimated that an average of 26.4 million people worldwide have been displaced by weather events every year since 2008. There could be as many as 1 billion climate migrants by 2050, thus reinforcing inequalities and complicating access to basic services for a large part of the global population. In addition to this, displacements and migration due to climate change and weather events interact with other issues, often leading to geopolitical tensions, consequently posing threats to international security.[10] We know that battling the climate, environment and health crises would reduce the risk of existing and new health threats, such as emerging zoonotic diseases, respiratory diseases and heat exposure, creating a more promising, healthy and equal future for coming generations – not leaving the most vulnerable groups behind.[11]

BUILD FORWARD BETTER AND GREENER

As an imminent consequence of the pandemic there is increasing attention and investment on Building Forward Better towards greener, more sustainable, and equal recovery using systematic approaches and holistic perspectives as the world has now to increase its activites to tackle the ongoing climate, biodiversity and environmental crises. The WHO highlights the need for recovery plans protecting nature, investing in essential services, ensuring quick and healthy energy transitions, promoting sustainable food systems, building healthy cities, and stop subsidising air pollution.[12] An analysis of COVID-19 related recovery efforts led by Oxford's Economic Recovery Project and the UN Environment Programme (UNEP) illustrates selected green policy areas that could optimise economic recovery with global climate and sustainability commitments after COVID-19: green energy, green transport, green building upgrades and energy sufficiency natural capital, and green research and development. They state: "The choice for policymakers is clear: make use of recovery spending to steer away from the worst impacts of climate change and inequality or reinforce existing carbon-intensive systems and lock in a future that is economically, socially, and environmentally unsustainable."[13]

Many governments and actors are already leading the way, with leadership focusing on green transitions. However, more action is urgently needed to assure a more promising outlook. During the first half of 2020, the level of carbon dioxide in the air exceeded 410 ppm, the highest level in 3 million years, as pointed out by a new multi-agency report launched in September by UN Secretary-General.[14] The recently published Oxford's Economic Recovery Project/UNEP report shows that "USD14.6 tn in announced spending across the world's largest fifty countries in 2020, of which USD1.9tn (13.0%) was directed to long-term 'recovery-type' measures and of that, USD341bn (18.0%) to green recovery initiatives. Considering total spending, only USD368bn (2.5%) was announced for green initiatives ".13 The Global Risks report 2021 states that without systematic solutions, emissions will only continue to increase, risking to miss the window of opportunity the pandemic presents, similar to the scenario of the 2008-2009 financial crisis where emissions quickly bounced back after a temporary decrease due to economies shutdowns.[15]

OPPORTUNITIES FOR BUILDING FORWARD GREENER

The Paris agreement and NDCs

Hamilton et al. state that greater inclusion of health in the Paris Agreement (which is now lacking[16]) can simultaneously increase health benefits and achieve the "well below 2°C" commitment across various regional and economic contexts.[17] There are substantial health co-benefits to be retrieved from these efforts, but they are not enough embraced in climate policies, the authors argue. In a scenario of meeting the goals of the Paris Agreement and the 2030 Agenda, the same study concludes that this pathway would save many millions of lives due to reduced air pollution, improvement of healthier diets and increased physical activity by 2040 in the nine countries of investigation, compared with the current pathway's scenario.[15]

The newly published UNFCCC NDC Synthesis Report, covering new or updated NDCs by 75 parties, concludes that most of these countries increased their levels of ambition to reduce emissions in the revised NDCs. Yet, the current levels of climate ambition are not on track to meet Paris Agreement goals. In the report, particularly vulnerable areas of concern were mentioned: agriculture and other aspects of food security, water, biodiversity and ecosystems, health systems, infrastructure (particularly energy) and loss of territory, livelihoods and habitats. Many countries highlighted contextual aspirations and priority areas to maximise synergies between climate commitments and human health.[18] In addition, the report found that health was identified as an adaptation priority in most of the NDC's adaptation components. While the references to health in the NDCs can strengthen the commitment to climate action at a national and global level, they are made in relation to financial and technological resources/assistance needed from wealthy countries to low-income countries. This makes it evident that the focus on health in the NDCs follows broader patterns of global inequalities.[19] While richer (high emitting) countries focus on non-health sectors (i.e., energy and the economy) and make no reference to health (e.g., Australia, EU member countries, the ``USA), it is the poorest and most climate-vulnerable countries that aim to address health and strengthen their health systems in their NDCs. This brings to the fore the issue of access to climate finance for climate-resilient health systems. According to the WHO Health and Climate Change Survey Report: Tracking Global Progress

(2019), the majority of countries reported only moderate or low levels of implementation of their national health and climate change strategies/plans, citing financing as the most common barrier to implementation. Only 9% of the surveyed countries reported having sufficient national health budgets to implement these strategies in full.

Opportunities and frameworks

As pointed out by many, and recently by Bill Gates in his new book[20], the only way to reach a healthy planet and healthy people is the path from current to 0 greenhouse gas emissions. Changing energy production from today's 80% dependence on fossil fuel to 100% clean energy is a gigantic task but necessary for people and planet survival. "The countries that build great zero-carbon companies and industries will be the ones that lead the global economy in the coming decades", says Bill Gates. The private sector taking more significant initiatives in green transitions is a crucial aspect, including innovations and technologies for a green and clean recovery, especially regarding energy, food systems and agriculture.

There is a need for policymaking to enable and stimulate these transformations, as well as the willingness to transform systems and traditional economic models from the private sector. It is time for bold political decisions and more efforts of science and innovations for creating a sustainable and healthy planet from a multisectoral and holistic approach. The youth climate movement have been ground-breaking in their requests for bold policies and action for their future on our planet. Essential questions to ask are: How do we increase accountability of all the world's governments, public, private and third sector actors? If the aim to Build Back Better historically has proven to merely build back[21], how can we make use of the window of opportunity the pandemic presents to do better regarding the converging crises of climate, environment and health and align our efforts towards the 2030 Agenda?

Positively, some global actors are picking up the pace. The European Green Deal aims to make Europe climate neutral by 2050[22], with China by 2060 and Japan by 2050. President Biden has proposed a $3 trillion climate plan to phase down fossil fuels by expanding renewable energy capacity while creating jobs, reducing pollution and investing in historically disadvantaged communities.[23] The World Bank Group recently launched their new Climate Change Action Plan, including committing to aligning financing flows with the objective of the Paris Agreement and increasing their climate finance with the goal of 35% of World Bank Group financing having climate co-benefits on average over the next five years.[24] As described earlier in this concept note, 100 companies are accountable for 71% of the world's total greenhouse gas emissions, but there are at the same time initiatives such as the World Business Council for Sustainable Development with the aim for accelerating the transformation of major economic systems, in line with Sustainable Development Goals, the Paris Climate Agreement and Vision 2050.[25]

There are multisectoral models and theories developed to improve a more sustainable and healthier planet, to apply at scale. A holistic approach to planetary and human wellbeing is provided by Kate Raworth's "Doughnut Economics" model, combining social and planetary boundaries[26], taking a systematic approach for future sustainability for human and planetary health, questioning the need for traditional economic growth to re-focus on more sustainable policies for all.[9] Similarly, Tim Jackson argues that "the pursuit of growth at all costs" reinforces inequality, hinders technological innovation and exacerbates financial instability when we instead need to create conditions for an economic system for all, within the planetary boundaries and constraints.[27]

The syndemic approach is a conceptual framework aiming to improve the understanding of co-occurring risk factors, improving prevention and intervention programmes. Mendenhall et al. state that the term syndemic refers to "synergistic health problems that affect the health of a population within the context of persistent social and economic inequalities"[28], considering social, environmental, political and economic factors – understanding that health is largely affected and determined by all of these factors[29]. The Lancet Commission on the Global Syndemic of Obesity, Undernutrition and Climate Change argues that the three "pandemics" of obesity, undernutrition and climate change represent the global syndemic that affects most people in every country and region worldwide; a synergy of epidemics, interacting with each other, sharing common societal drivers, highlighting the importance of food systems and their unequal distribution and function globally.[30] Richard Horton writes: "COVID-19 is not a pandemic. It is a syndemic. The syndemic nature of the threat we face means that

a more nuanced approach is needed if we are to protect the health of our communities", highlighting the prevention of Non-Communicable Diseases (NCDs), understanding social inequalities, and virtually all elements playing into the direct and indirect effects of the pandemic.[31] The syndemic approach provides an integrated lens of the current pandemic, helping us understand it in a context of a more extensive vision encompassing education, employment, housing, food and environment - a systems view, analysing and understanding how crises and inequalities converge and how to tackle them holistically.

In light of recovering from the pandemic and making investments in green recovery, academia, business, and politicians have a tremendous responsibility to work together to battle these crises, promote health and equality, and prevent disease. The aforementioned Oxford's Economic Recovery Project/UNEP report states: "Despite positive steps towards a sustainable COVID-19 recovery from a few leading nations, the world has so far fallen short of matching aspirations to build back better. But opportunities to spend wisely on recovery are not yet over. Governments can use this moment to secure long-term economic, social, and environmental prosperity."[13]

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OBJECTIVES

The world is in a situation where there is an increased openness for transformation due to the pandemic, where clear goals need to be set, and key activities need to be prioritised. In this, PMAC can be a strong voice addressing the converging global crises and how to take bold actions for humanity and planet – emphasising that human health is dependent on the planet's health.

The objectives for sub-theme 2 are:

1. Discuss actions to address the converging crises of climate, biodiversity, environment and health.
2. Mobilise political and private sector support and momentum for action-oriented collaboration between countries and actors to synergise in political solutions and mechanisms. This should also include creating accountability for investing greener in the recovery post-COVID-19 and mobilising resources for "building back better".
3. Engage youth and vulnerable groups in the converging crises of climate change, environmental degradation and health in these discussions, and create a platform for them to express what they need from today's leaders
4. Leverage the momentum and impacts from COP26 (before PMAC) and contribute to Stockholm +50 in June 2022 (after PMAC).

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Sub-Theme 3

Learning from the COVID-19 Pandemic to Better Prepare for Tomorrow’s Challenges

SUB-THEME 3

BACKGROUND / OVERVIEW

The ongoing COVID-19 pandemic has laid bare our collective weaknesses in being able to effectively respond to the emergence of a highly contagious and lethal microbial threat. Despite extraordinary advances over the past century in science and in global health standards, we still live in a world where the threat of an infectious agent can emerge anytime and anyplace without warning and spread rapidly to every community and every household without regard to national borders.

Importantly, COVID-19 is not the first pandemic due to an emergent pathogen from wildlife of this century and is unlikely to be the last. Over the last 20 years a number of high impact pathogens have emerged or re-emerged. These include emergence of diseases due to three new coronaviruses (CoV), namely Severe Acute Respiratory Syndrome (SARS) in 2003; Middle East Respiratory Syndrome (MERS) in 2012; and the ongoing COVID-19 pandemic, a number of highly pathogenic influenza A viruses (e.g. H5N1 in 2003; H7N9 in 2013; and the H1N1 pandemic of 2009), the Zika virus as a global health emergency in 2016, and the continuing rise and spread of Ebola in West and Central Africa since 2013.

All these emergent pathogens have jumped from transmission among non-human animals to transmission among humans. Over the course of the remainder of this century, the likely frequency of epidemics and pandemics will continue to increase, driven mainly by demographic trends, including urbanization, and environmental degradation, climate change, persistent social and economic inequalities, and globalized trade and travel.

While upgrading of the health security apparatus over the last decade has been welcomed, COVID-19 underscores that the existing legislation, processes, and institutional arrangements such as the International Health Regulations (IHR) and Global Health Security Agenda (GHSA) are insufficient for early warnings and in preventing impacts of events such as those caused by SARS COV-2. Some countries that were assessed to be well prepared using various indexes and metrics, performed poorly in containment and mitigation during the COVID-19 pandemic. Clearly, there are other components of health emergency risk management and an effective response that have not been well characterized.

The experience of the COVID-19 pandemic, yet again underscores that new efforts are needed to craft global strategies, policies and regulatory frameworks that improve our collective capacities to prevent, as well as rapidly detect and respond to threats. The COVID-19 pandemic, has heightened the sensitivity of the global community to devastating socio-political and economic damage to the planet. This is an opportunity to capitalize on a growing international discussion among political and global health leaders on the need to address future emerging threats to leverage political and financial support, as well as build out its organizational and operational architecture. Making good use of the additional energy in the system will be essential if we are to learn the lessons that we have failed to learn before. We must capitalize on this to guide both near-term and longer term future investments in pandemic preparedness and to expand work to understand new pathogens and where they come from before there are widespread outbreaks.

OBJECTIVES (SOLUTION ORIENTED)

1. Characterize and understand the factors that led to the inadequate global preparedness for and response to COVID-19, leading to direct and indirect impacts, in order to answer “how can we be better prepared to prevent and mitigate the impacts of any future pandemic threat?”
2. Characterize and understand the strengths and weaknesses in the design and implementation of: the global regulatory framework and conventions, such as the IHRs and the SDGs; the global health architecture; international funding mechanisms etc, in preparing the world for COVID-19 and identify how they might be improved to make them more effective for future emerging threats?

Understand how current mega-trends are likely to impact the emergence and spread of future infectious disease threats and identify actions to make the world’s social, political and economic systems better able to cope with these changing dynamics.

| SESSIONS

25 January 2022

12:00 - 13:00 UTC	Armchair Conversation | with Prince Mahidol Award Laureates 2021

26 January 2022

11:00 - 12:30 UTC	Opening Session | Keynote Session – Armchair Conversation
13:00 - 14:30 UTC	S1 | Understanding the Megatrends of the 21st Century – A Critical Step Towards Getting the World We Want

27 January 2022

11:00 - 12:30 UTC	S2 | To What Extent Will the COVID Pandemic Affect Achievement of the SDG Goals
13:00 - 14:30 UTC	S3 | Scaling up Efforts to Tackle the Climate Crisis and Building Forward Greener

28 January 2022

11:00 - 12:30 UTC	S4 | Health Systems in 2030: What will They Look Like?
13:00 - 14:30 UTC	S5 | Managing Pandemics During the Fourth Industrial Revolution (Technological Revolution)

29 January 2022

11:00 - 12:00 UTC	S6 | Pandemic Preparedness and Response: Stopping the Next Outbreak Before it Becomes a Pandemic
12:30 - 13:30 UTC	S7 | Capacity to Contain Future Pandemics in Communities
14:00 - 14:45 UTC	Closing Session | Armchair Conversation

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ARMCHAIR CONVERSATION

WITH PRINCE MAHIDOL AWARD LAUREATES 2021

| MODERATOR

- **Pavit Pienvichit,** Deputy Dean for Corporate Communication, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand

| KEYNOTE SPEAKER

- **Drew Weissman,** Professor of Medicine, and Roberts Family Professor in Vaccine Research, University of Pennsylvania, Philadelphia, PA., United States of America
- **Pieter R. Cullis,** Director, Nanomedicines Research Group, Professor, Department of Biochemistry and Molecular Biology, University of British Columbia, Canada
- **Katalin Karikó,** Senior Vice President (Pioneer of mRNA Vaccine Technology), BioNTech RNA Pharmaceuticals, Germany

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OPENING SESSION

KEYNOTE SESSION – ARMCHAIR CONVERSATION

| BACKGROUND

For the Keynote Session of PMAC 2022, the live armchair conversation will replace the usual series of keynote speeches. The armchair conversation will be the highlight of this event, with world top class speakers discussing about “THE WORLD WE WANT: Actions Towards a Sustainable, Fairer and Healthier Society”. In the armchair conversation, the speakers will each give a brief 5-minute speech, then the moderator will ask questions.

| MODERATOR

- **David Harper,** Senior Consulting Fellow, Global Health Programme, Chatham House, United Kingdom

| KEYNOTE SPEAKER

- **Michelle Bachelet,** United Nations High Commissioner for Human Rights and Former President of Chile, , Chile
- **Helen Clark,** PMNCH Board Chair,, Former Prime Minister of New Zealand and Former Administrator, United Nations Development Programme, New Zealand
- **Margaret Chan,** Founding Dean, Vanke School of Public Health, Tsinghua University; Emeritus Director-General, World Health Organization, Tsinghua University, China

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S1

UNDERSTANDING THE MEGATRENDS OF THE 21ST CENTURY – A CRITICAL STEP TOWARDS GETTING THE WORLD WE WANT

| BACKGROUND

Over twenty-five hundred years ago the Chinese general Sun Tzu noted that success in any undertaking is intrinsically linked to knowledge when he wrote “to know your enemy and to know yourself, in a hundred battles you will never be defeated”. The theme of PMAC 2022 is “The World We Want: Actions Towards a Sustainable, Fairer and Healthier Society”. If knowledge is power, then to be successful in achieving the world we want we need to be well informed about the challenges ahead. As has been noted elsewhere, PMAC 2022 aims to take a long view by focusing on the ‘mega trends” that are shaping the 21st century and the complex interplay between them, and how they are already reshaping our global health landscape. By understanding these “mega trends” and how they are likely to impact on the world around us is a critical step towards “knowing your enemy” and being victorious in achieving the world we want.

Session 1 will provide an overview of those trends that are mostly likely to define the future world we will live in, as well as identify actions that the world can take to minimize the impact of those trends that could be most destructive and maximize those that could be most beneficial.

| OBJECTIVES

Understand how ongoing and emerging mega-trends spanning evolving demographic changes, expanding environmental degradation, social and economic inequities, the recalibration of geo-political alliances and power, and looming technological revolutions are likely to impact the health of the world’s population and identify actions to make the world’s social, political and economic systems better able to cope with these changing dynamics.

Following PMAC2022 expand the outreach of Session 1 by publishing an article based on the substance of the Session 1 keynote and debate in a science journal that targets the general public.

| MODERATOR

- **Dennis Carroll,** Chair, Leadership Board, Global Virome Project, Senior Advisor, Global Health Security, URC, United States of America

| PANELIST

- **Katalin Karikó,** Senior Vice President (Pioneer of mRNA Vaccine Technology), BioNTech RNA Pharmaceuticals, Germany
- **Gordon Brown,** he United Nations Special Envoy for Global Education and former Prime Minister of the United Kingdom, The United Nations, United Kingdom
- **Constant Tedder,** Founder & CEO, The Hive, World Ltd, and Founder & CEO, Earth.Org, The Hive, World Ltd, and Earth.Org, China
- **Ayoade Olatunbosun-Alakija,** Co-chair of the Africa Union Africa Vaccine Delivery Alliance, , Nigeria
- **Iris Blom,** Liaison Officer to the World Health Organization, The International Federation of Medical Students Associations (IFMSA), Switzerland
- **Greta Thunberg,** Co-Founder, Fridays for Future.Org, Sweden
- **Mohamed Mamdouh Elsayed Sayed Ahmed Eissa,** IFMSA Liaison Officer for Public Health Issues, IFMSA, Egypt
- **Yuval Noah Harari,** Faculty Member, History Department, The Faculty of Humanities, The Hebrew University of Jerusalem, Israel
- **Gro Harlem Brundtland,** Member of The Elders, Former Prime Minister of Norway,, and Former Director-General of the World Health Organization, Norway
- **Brian Christian,** Author, The Alignment Problem; Visiting Scholar, UC Berkeley, United States of America
- **Naveen Rao,** Senior Vice President, The Rockefeller Foundation, United States of America

| SPEAKER

- **John Clamme,** Director of Strategic Partnerships, Institute for the Future (IFTF), United States of America
- **Jayanta Bhattacharya,** Professor of Medicine at Stanford University,, Research Associate at the National Bureau of Economics Research, and Senior fellow at the Stanford Institute for Economic Policy Research, and at the Stanford Freeman Spogli Institute, United States of America

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S2

TO WHAT EXTENT WILL THE COVID PANDEMIC AFFECT ACHIEVEMENT OF THE SDG GOALS

| BACKGROUND

This panel will consider what needs to change to realize SDGs by 2030?. Featuring a panel of people with differing views of how to achieve the SDGs (taking into account the threat of climate change). Emphasis will be placed on the role of economics (differing systems) and policy (differing political systems).

| OBJECTIVES

1. Consider the impact of covid-19 on the likelihood of achieving the SDGs by 2030

2. Consider what need to change for the SDGs to be met

3. What economic systems are most likely to enable the SDGs to be achieved.

| MODERATOR

- **Fran Baum,** Co-Chair Global Steering Council, People's Health Movement, Australia

| PANELIST

- **Joyati Ghosh,** Professor of Economics, Jawaharlal Nehru University, India
- **Richard Horton,** Editor in Chief, The Lancet, United Kingdom
- **Aboubacar Kampo,** Director, Program Health, UNICEF, United States of America
- **Agnes Binagwaho,** Vice Chancellor, University of Global Health Equity, Rwanda
- **Ronald Labonté,** Professor and Holder of the Distinguished Research Chair in Contemporary Globalization and Health Equity, University of Ottawa, Canada
- **Wardarina Thaib,** Program Officer, Breaking Out of Marginalisation Programme at Asia Pacific Forum on Women, Law and Development, and Co-chair Asia Pacific Regional Civil Society Engagement Mechanism, Thailand

PMAC PRINCE MAHIDOL AWARD CONFERENCE

S3

SCALING UP EFFORTS TO TACKLE THE CLIMATE CRISIS AND BUILDING FORWARD GREENER

| BACKGROUND

The 2022 Prince Mahidol Award Conference (PMAC), themed "The World We Want: Actions Towards a Sustainable, Fairer and Healthier Society", aims to take a long view by focusing on the megatrends that will shape the rest of this century and the complex interplay between them, including how they are already reshaping our global health landscape.

The converging crises of climate, biodiversity, environment and health are megatrends that present current and future threats to our planet and population. The PMAC 2022 sub-theme 2, "Scaling up Efforts to Tackle the Climate Crisis and Building Forward Greener", coordinated by SIGHT (the Swedish Institute for Global Health Transformation), FHI360, WHO, World Bank, and USAID, will discuss these converging crises, and highlight the opportunities for actors from all sectors joining in accelerated efforts, securing human and planetary health prosperity.

Under this sub-theme, a high-level virtual session will highlight the actions needed to tackle these converging crises, mobilize political and private sector support, develop new strategies to re-invigorate commitments to multilateral partnerships, and build collaborative partnerships between governments, non-governmental actors, and their citizens. The session will discuss where the COVID-19 crisis has highlighted pathways for a more resilient and green recovery, aligning our efforts towards the 2030 Agenda, avoiding a return to "business as usual", and environmentally destructive investment patterns and activities. Successfully tackling these converging crises would reduce the risk of existing and new health threats, such as emerging zoonotic diseases, respiratory diseases and heat exposure, creating a more promising, healthy and equal future for coming generations.

In addition, the high-level virtual session aims to leverage momentum and impacts from two upcoming international events: UNFCCC COP26 in November 2021 and the 'Stockholm+50: a healthy planet for the prosperity of all – our responsibility, our opportunity' - the 50th anniversary of the UN Conference on the Human Environment in June 2022. The plenary session will host politicians and decision-makers, academia, and the private sector for high-level, stimulating discussions and identifying action points promoting positive environment-, biodiversity-, climate-, and health outcomes.

| OBJECTIVES

The objectives for sub-theme 2 are:

- Discuss actions to address the converging crises of climate, biodiversity, environment and health.

- Mobilise political and private sector support and momentum for action-oriented collaboration between countries and actors to synergise in political solutions and mechanisms, including creating accountability for investing greener in the recovery post-Covid-19 and mobilising resources for "building back better".

- Engage youth and vulnerable groups in the converging crises of climate change, biodiversity, environmental degradation and health in these discussions.

- Leverage the momentum and impacts from COP26 (before PMAC) and contribute to Stockholm +50 in June 2022 (after PMAC).

| MODERATOR

- **Richard Horton,** Editor in Chief, The Lancet, United Kingdom

| SPEAKER

- **Andy Haines,** Professor of Environmental Change and Public Health, LSHTM, United Kingdom
- **Iferemi Waqainabete,** Minister for Health and Medical Services, Ministry of Health and Medical Services, Fiji, Fiji
- **Jun Ma,** Director, Institute of Public & Environmental Affairs (IPE), China
- **Elizabeth Wathuti,** Climate Activist and Founder, Green Generation Initiative, Kenya
- **Gillian Caldwell,** Agency Climate Change Coordinator and Deputy Assistant Administrator, United States Agency for International Development, United States of America

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S4

HEALTH SYSTEMS IN 2030: WHAT WILL THEY LOOK LIKE?

| BACKGROUND

Increasing the ability for a health system to withstand and effectively respond to shocks and stressors is critical to achieving a position from which to address effectively future pandemics and to maintain progress to date on the world's global health goals. To be resilient, health systems must be flexible enough to adjust resources, policy, and focus in response to constantly emerging challenges. The COVID-19 pandemic has further underscored the need to reorient ourselves from reactive investments in health to prioritize investments that enable pandemic prevention, risk reduction, and preparedness, as well as ensure continuity of essential services in the face of health emergencies. For example, USAID recognizes the need to build resilience to acute, time-bound events such as disease outbreaks, as well as to longer-term dynamics such as protracted population displacements, weak government authority or legitimacy, population pressure, social exclusion, and climate variability. The type, intensity, and number of overlapping shocks and stressors cannot always be predicted, but the fact that there will be shocks and stressors can. In many countries, health systems are unprepared for these inevitable events, whether unexpected external crises or internal governance challenges such as shortages or payment delays.

Primary Health Care (PHC) is vital to the task of building strong health systems. The exact nature of PHC is a matter of debate. WHO has recently revitalized its support for PHC and while this was widely welcomed some flaws have been highlighted, as the Astana Declaration does not see PHC as an organizing principle for a health system and as having a role in supporting and advocating for intersectoral action. The importance of strong public health systems has been shown in many ways during the covid-9 pandemic.

This session will build on a PMAC workshop that is to take place in November or early December 2021 and synthesize the output from that workshop. The workshop will draw thought leaders and experts from the perspectives named below. These participants will be asked (with prompts) to identify key principles that must be adhered to in the characterization of health systems in 2030 and provide recommendations. With this output, the panelists in the plenary session will engage in dialogue and debate, producing some agreement and perhaps some difference during the plenary. Across both sessions, discussion moderators will make every effort to direct participants' thinking away from the building blocks of the health system and employ more of a cross-cutting systems lens.

| OBJECTIVES

- To discuss and debate preferred characteristics of health systems in 2030;
- To discuss and debate priorities for strengthening health systems from the perspective of target conditions or the participation of often overlooked participants in the health system; and
- To reflect on the priorities for investment in strengthening health systems to boost health system resilience towards 2030, and capture lessons learned from the COVID-19 pandemic.

| MODERATOR

- **Gavin Yamey,** Director, Center for Policy Impact in Global Health, United States of America

| PANELIST

- **Maris Jesse,** Former Deputy Secretary General, Ministry of Social Affairs, Estonia
- **Suraya Dalil,** Director, Special Programme on Primary Health Care, WHO, Afghanistan
- **Juan Pablo Uribe,** Global Director for Health Nutrition and Population, The World Bank, United States of America
- **Jan-Willem Scheijgrond,** Global Head of Government and Public Affairs, Philips, Netherlands
- **Catherine Kyobutungi,** Executive Director, African Population and Health Research Center, Uganda
- **Yogesh Jain,** Founder, Sangwari (People's Association for Equity and Health), and Commissioner for Lancet Commission on Reframing NCDs and Injuries in the Poorest Billion, India
- **Ariel Pablos-Mendez,** Professor of Medicine, Columbia University, New York, United States of America

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S5

MANAGING PANDEMICS DURING THE FOURTH INDUSTRIAL REVOLUTION (TECHNOLOGICAL REVOLUTION)

| BACKGROUND

The COVID-19 Pandemic was a showcase of how governments, industries, communities and individuals applied the state-of-art technologies to the evolving situation at ever unprecedented speed and scale. This PMAC-2022 session is dedicated to cover some recent changes / technological revolutions that are changing management of epidemics/ pandemics, highlighting challenges and opportunities. Developers, owners, users of emerging technologies will tell us about their success stories... It is truly our pleasure to provide this fantastic opportunity to learn about the futuristic views of managing epidemics and pandemics in the future. The COVID-19 Pandemic was a showcase of how governments, industries, communities and individuals applied the state-of-art technologies to the evolving situation at ever unprecedented speed and scale. This PMAC-2022 session is dedicated to cover some recent changes / technological revolutions that are changing management of epidemics/ pandemics, highlighting challenges and opportunities. Developers, owners, users of emerging technologies will tell us about their success stories... It is truly our pleasure to provide this fantastic opportunity to learn about the futuristic views of managing epidemics and pandemics in the future.

| OBJECTIVES

To learn about innovative tools and ideas in managing epidemics and pandemics now and in the future.

| MODERATOR

- **Sylvie Briand,** Director, Epidemic and Pandemic Preparedness and Prevention Department, World Health Organization, Switzerland

| PANELIST

- **Nahoko Shindo,** Unit Head, Epidemic Forecasting and Infectious Disease Strategies, World Health Organization, Switzerland
- **Kristine Rose,** R & D Chief of Staff, The Coalition for Epidemic Preparedness Innovations (CEPI), United Kingdom

| SPEAKER

- **Adebola Olayinka,** National Lassa fever Research Coordinator, WHO/NCDC, Nigeria
- **Shan Xu,** Head of WHO Collaborating Centre for Digital Health, China Academy of Information and Communications Technology (CAICT), China
- **David Heymann,** Professor, Infectious Disease Epidemiology, London School of Hygiene and Tropical Medicine, United Kingdom
- **Tina Purnat,** Team Lead for Infodemic management, Epidemic and Pandemic Preparedness and Prevention Department, WHO, Switzerland
- **Mike Varshavski,** MD and medical educator on social media, DM Operations Inc., United States of America
- **Yosuke Hatanaka,** Executive Adviser for Chief Medical and Global Health, Officer on ICT strategies for COVID-19 Countermeasure, Ministry of Health, Labour and Welfare, Japan
- **Daniel Bausch,** Senior Director, Emerging Threats and Global Health Security, FIND, Switzerland
- **Melanie Saville,** Director, Vaccine Research and Development, The Coalition for Epidemic Preparedness Innovations (CEPI), United Kingdom
- **Sarah Hess,** Technical Officer, WHO, Switzerland
- **Lisa Menning,** Team Lead, Demand and Behavioural Sciences, Essential Programme on Immunization, WHO, Switzerland
- **Alexandre Pinho,** Global UN & IGO Sector Lead, Microsoft, United States of America
- **Beth Thompson,** Associate Director, Policy, Wellcome Trust, United Kingdom
- **Michael J Ryan,** Executive Director, WHO Health Emergencies Programme, World Health Organization, Switzerland

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S6

PANDEMIC PREPAREDNESS AND RESPONSE: STOPPING THE NEXT OUTBREAK BEFORE IT BECOMES A PANDEMIC

| BACKGROUND

Despite years of planning and investment since the 2005 International Health Regulations were published by WHO, the COVID-19 pandemic exposed how remarkably unprepared the world was to control the spread and recover from the effects of SARS-CoV-2. Among several analyses of what went wrong with the response, in May 2021, The Independent Panel for Pandemic Preparedness & Response issued a comprehensive main report of its findings and recommendations for action to curb the COVID-19 pandemic and to ensure that any future infectious disease outbreak does not become another catastrophic pandemic.

This PMAC-2022 parallel session will address some elements central to stopping the next outbreak before it becomes a pandemic. Panelists will be asked to identify enabling factors and likely barriers; and to address specific action steps to achieve the goal of preventing another pandemic.

Key themes are:

1. Investing in preparedness and coordination now to prevent or mitigate the next crisis

2. The future of broadly-acting antiviral agents and universal vaccines for coronaviruses, influenza and other high-consequence infectious agents

3. Building global manufacturing capacity for rapid antiviral and vaccine production, including mRNA-based vaccines, towards full global access

4. Establishing a pre-negotiated global platform for access to vaccines, tools and supplies

| OBJECTIVES

To identify enabling factors and likely barriers; and to illuminate specific action steps to achieve the goal of preventing another pandemic.

| MODERATOR

- **Helen Rees,** Executive Director, Wits RHI, University of Witwatersrand, South Africa
- **Timothy Mastro,** Chief Science Officer, Family Health International (FHI 360), United States of America

| PANELIST

- **John Nkengasong,** Director, Africa CDC, Ethiopia
- **Monika Puri,** Global Policy Lead | Global Access, Roche (F. Hoffmann-La Roche Ltd.), Switzerland
- **Rick Bright,** CEO, Pandemic Prevention Institute, and Senior Vice President, Pandemic Prevention, The Rockefeller Foundation, United States of America
- **Soumya Swaminathan,** Chief Scientist, World Health Organization, Switzerland
- **Raji Tajudeen,** Head of Public Health Institutes and Research at the Africa Centres for Disease Control and Prevention (Africa CDC), Africa CDC, Ethiopia

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S7

CAPACITY TO CONTAIN FUTURE PANDEMICS IN COMMUNITIES

| BACKGROUND

Since the start of the 21st century, infectious disease outbreaks have increased. The vast majority, 75 percent, of infectious diseases in people originate from animals, at a time when an increasing number of people around the world are living in closer proximity to animals. These threats have manifested themselves over the past two decades in the form of increased frequency and severity of outbreaks, with the ongoing COVID-19 pandemic the most serious in a century. These outbreaks are a sobering reminder of how diseases know no borders, and how every country remains vulnerable to zoonotic diseases reinforcing the importance of global health security efforts in our everyday lives. The COVID-19 pandemic is also a strong reminder of the connection between animals, humans and the environment, and the effect an emerging pathogen can have on global health and economies. Additionally, climate change, land use change, deforestation and other drivers change contact between animals and people in new and risky ways leading to more spillover events

While the global health community has been preparing for large-scale epidemics and pandemics, the COVID-19 pandemic has laid bare the weaknesses and vulnerabilities for a global response. Initially some countries were able to leverage their previous preparedness efforts to implement successful public health responses, however all countries have been overwhelmed by surges, resources stretched thin, at some point during the pandemic. The global community understands that outbreaks begin and end in communities. Experience from previous infectious disease outbreaks and the COVID-19 pandemic has demonstrated that sustained community engagement is critical for early detection and response as well as for establishing trust and social cohesion. We need to invest in communities; leverage academic institutions; support and resource frontline health workers including community health workers; and invest in community-based surveillance and data collection to inform early detection and enable swift action to respond.

This session will explore the resources, trust, data and information needed for communities to better detect and respond to infectious disease events by practitioners, educators, and community leaders. Specifically, the session will explore what we have learned from past infectious disease outbreaks and what we can improve in supporting community-level workers, the role the community can play in detection and surveillance to support early response, and the role of academic institutions in supporting communities.

| OBJECTIVES

Key questions

This session will explore what is needed for communities to better detect and respond to infectious disease events from the different perspectives of practitioners and educators.

This session will explore the following topics:

Front-line/community health (human and animal) worker: What measures can be taken to strengthen community health (animal and human) investments to better prepare communities for infectious disease threats and also foster trust, cohesion and equity?

Data and early warning: What is the role of the community, including clinicians, in surveillance and how can their use of data be facilitated to better detect and respond to infectious disease events? How can technology be used to support data collection and dissemination? How can data from the community be fed into early warning platforms and how does that data flow back to the community level for risk analyses and assessment?

Role of academia in supporting communities: What role do academics and universities play in preparing for and supporting responses to infectious diseases events in communities? How can these institutions be leveraged to respond to infectious disease events in communities?

| MODERATOR

- **Raj Panjabi,** US Global Malaria Coordinator, USAID, United States of America

| PANELIST

- **Jonna Mazet,** Vice Provost - Grand Challenges, University of California, Davis, United States of America
- **James Bangura,** Country Lead, Metabiota and, Technical Advisor, Zoonotic Disease Surveillance, Directorate of Health Security and Emergencies, Ministry of Health and Sanitation, Sierra Leone
- **Ramatu Jalloh,** Supervisor, Partner In Health and, Community Health Worker, CHW Advocates, Sierra Leone
- **Patipat Susumpow,** Managing Director, Opendream Co., Ltd., Thailand

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CLOSING SESSION

ARMCHAIR CONVERSATION

| BACKGROUND

Prince Mahidol Award Conference (PMAC) 2022 “THE WORLD WE WANT: Actions Towards a Sustainable, Fairer and Healthier Society”

The closing armchair conversation will be one of the highlights of this event, with engagement across generations and discussion about the future. It will also be the bridge to PMAC 2023 on the theme of Climate Change and Health. In the armchair conversation, the 2 speakers will each give a brief 5-minute speech, then the moderator will ask questions.

| OBJECTIVES

The Closing Session Armchair Conversation will conclude PMAC 2022 with a forward-looking settlement of the main theme “THE WORLD WE WANT: Actions Towards a Sustainable, Fairer and Healthier Society”.

| MODERATOR

- **Ashley McKimm,** Director of Innovation and Improvement, British Medical Journal, United Kingdom

| PANELIST

- **Ban Ki-Moon,** Deputy Chair of The Elders; Former Secretary-General of the United Nations, The Elders Foundation, United Kingdom
- **Muzoon Almellehan,** Education Activist and UNICEF Goodwill Ambassador, The United Nations Children's Fund (UNICEF), United Kingdom