



PMAC | PRINCE MAHIDOL
AWARD CONFERENCE

2023



REPORT ON THE
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PMAC 2023

**S≡TTING
A NEW HEALTH
AG≡NDA**

At the Nexus of Climate Change,
Environment, and Biodiversity

24 - 29 JANUARY 2023 | BANGKOK, THAILAND

*True Success is not in the learning
but in its application to the benefit of mankind*

His Royal Highness Prince Mahidol Songkla





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PRINCE MAHIDOL AWARD

The Prince Mahidol Award was established in 1992 to commemorate the 100th birthday anniversary of Prince Mahidol of Songkla, who is recognized by the Thais as 'The Father of Modern Medicine and Public Health of Thailand'.

His Royal Highness Prince Mahidol of Songkla was born on January 1, 1892, a royal son of Their Majesties King Rama V and Queen Savang Vadhana of Siam. He received his education in England and Germany and earned a commission as a lieutenant in the Imperial German Navy in 1912. In that same year, His Majesty King Rama VI also commissioned him as a lieutenant in the Royal Thai Navy.

Prince Mahidol of Songkla had noted, while serving in the Royal Thai Navy, the serious need for improvement in the standards of medical practitioners and public health in Thailand. In undertaking such mission, he decided to study public health at M.I.T. and medicine at Harvard University, U.S.A. Prince Mahidol set in motion a whole range of activities in accordance with his conviction that human resource development at the national level was of utmost importance and his belief that improvement of public health constituted an essential factor in national development. During the first period of his residence at Harvard, Prince Mahidol negotiated and concluded, on behalf of the Royal Thai Government, an agreement with the Rockefeller Foundation on assistance for medical and nursing education in Thailand.

One of his primary tasks was to lay a solid foundation for teaching basic sciences which Prince Mahidol pursued through all necessary measures. These included the provision of a considerable sum of his own money as scholarships for talented students to study abroad.

After he returned home with his well-earned M.D. and C.P.H. in 1928, Prince Mahidol taught preventive and social medicine to final year medical students at Siriraj Medical School. He also worked as a resident doctor at McCormick Hospital in Chiang Mai and performed operations alongside Dr. E.C. Cord, Director of the hospital. As ever, Prince Mahidol did much more than was required in attending his patients, taking care of needy patients at all hours of the day and night, and even, according to records, donating his own blood for them.

Prince Mahidol's initiatives and efforts produced a most remarkable and lasting impact on the advancement of modern medicine and public health in Thailand such that he was subsequently honoured with the title of "Father of Modern Medicine and Public Health of Thailand".

In commemoration of the Centenary of the Birthday of His Royal Highness Prince Mahidol of Songkla on January 1, 1992, the Prince Mahidol Award Foundation was established under the Royal Patronage of His Majesty King Bhumibol Adulyadej to bestow an international award – the Prince Mahidol Award, upon individuals or institutions that have made outstanding and exemplary contributions to the advancement of medical, and public health and human services in the world. The Prince Mahidol Award will be conferred on an annual basis with prizes worth a total of approximately USD 100,000. A Committee, consisting of world-renowned scientists and public health experts, will recommend selection of laureates whose nominations should be submitted to the Secretary-General of the Foundation before May 31st of each year. The committee will also decide on the number of prizes to be awarded annually, which shall not exceed two in any one year. The prizes will be given to outstanding performance and/or research in the field of medicine for the benefit of mankind and for outstanding contribution in the field of health for the sake of the well-being of the people.

These two categories were established in commemoration of His Royal Highness Prince Mahidol's graduation with Doctor of Medicine (Cum Laude) and Certificate of Public Health and in respect to his speech that:

TRUE SUCCESS IS NOT IN THE LEARNING, BUT IN ITS APPLICATION TO THE BENEFIT OF MANKIND

In the past 30 years, the Prince Mahidol Award has been conferred to 90 individuals and groups of individuals and institutions. Among them, 4 were Award recipients of Thai nationality, namely: (1) Professor Dr. Prasong Tuchinda, from studying the effects of Dengue virus to the disability of children who are sick with dengue hemorrhagic fever; (2) Dr. Suchitra Nimmannitya, from identifying severity classification of dengue hemorrhagic fever. Both of them received the Prince Mahidol Award in the field of Medicine in 1996; (3) Dr. Wiwat Rojanapithayakorn, from founding the project to promote the use of condom to prevent spread of HIVs; and (4) Mr. Mechai Viravaidya, from initiating the communication campaign to disseminate the use of condoms. Both Dr. Wiwat Rojanapithayakorn and Mr. Mechai Viravaidya received the Prince Mahidol Award in the field of Public Health in 2009.

Among the Awardees of the Prince Mahidol Award, 5 subsequently received the Nobel Prize:

(1) PROFESSOR BARRY J. MARSHALL

from Australia was conferred the Prince Mahidol Award in the field of Public Health in 2001 for the discovery of the new bacterium identified as *Helicobacter pylori* that caused severe gastritis and its sensitivity to particular antibacterial drugs. He received the Nobel Prize in the field of Medicine in 2005 for the same discovery;

(2) PROFESSOR HARALD ZUR HAUSEN

from Germany was conferred the Prince Mahidol Award in the field of Medicine in 2005 for the discovery of the human papilloma virus HPV16 and HPV18 from the cancer tissue and elucidated how the viruses turn normal cells into cancer cells. He received the Nobel Prize in the field of Medicine in 2008 for the same discovery;

(3) PROFESSOR DR. SATOSHI OMURA

was conferred the Prince Mahidol Award in the field of Medicine in 1997. He is known for the discovery and development of various pharmaceuticals originally occurring in microorganisms. His research group isolated a strain of *Streptomyces Avermitilis* that produce the anti-parasitical compound avermectin which contributed to the development of the drug ivermectin that is currently used against river blindness, lymphatic filariasis, and other parasitic infections. He received the Nobel Prize in the field of Medicine in 2015 for the same discovery;

(4) PROFESSOR TU YOU YOU

a member of the China Cooperative Research Group on Qinghaosu and its Derivatives as Antimalarials, was conferred the Prince Mahidol Award in the field of Medicine in 2003 in an organisational category for the discovery of Qinghaosu as a new drug for treatment of the *P.falciparum* malaria. She received the Nobel Prize in the field of Medicine in 2015 for the same discovery;

(5) SIR GREGORY PAUL WINTER

was conferred the Prince Mahidol Award in the field of Medicine in 2016. He was a pioneer in the field of antibody engineering and modification technology. He invented techniques to humanise antibodies for therapeutic uses, which later led to the creation of cutting-edge therapeutic drugs. He received the Nobel Prize in the field of Chemistry in 2018 for the same discovery.



<https://www.princemahidolaward.org>



PRINCE MAHIDOL AWARD 2022



The Prince Mahidol Award Foundation of which H.R.H. Princess Maha Chakri Sirindhorn is the President, has decided to confer the Prince Mahidol Award 2022

In the field of Medicine to

Ralph A. DeFronzo, M.D.

In the field of Public Health to

Douglas R. Lowy, M.D.

John T. Schiller, Ph.D.

Ian Frazer, M.D.



**Her Royal Highness
Princess Maha Chakri Sirindhorn,
as the Representative of His Majesty the King,**

Presiding Over the Presentation
Ceremony of the Prince Mahidol Award 2022
at the Chakri Throne Hall as well as a Dinner Party
in Honour of the Prince Mahidol Award Laureates 2022
at the Boromarajasathitmaholarn Hall
on Thursday, 26th January, B.E. 2566 (A.D. 2023)

PRINCE MAHIDOL AWARD LAUREATE 2022



IN THE FIELD OF MEDICINE

Ralph A. DeFronzo, M.D.

Professor of Medicine, Diabetes Division,
University of Texas Health Science Center at San Antonio, Texas,
USA



Professor Dr. Ralph A. DeFronzo received his Doctor of Medicine from Harvard Medical School, Fellowship in Endocrinology from the National Institutes of Health and Fellowship in Nephrology from the University of Pennsylvania, the United States of America.

The incidence of type 2 diabetes (T2D) is increasing worldwide, therefore the appropriate T2D management is needed to reduce the incidence of T2D and to prevent the chronic diabetic complications. Professor DeFronzo has persevered in studying the pathophysiology of type 2 diabetes. Using several experimental methods in animals, obese subjects, subjects with a family history of diabetes and T2D subjects, he has helped to define that obesity, especially central obesity, caused the biochemical and molecular disturbances responsible for insulin resistance in T2D. Professor DeFronzo also demonstrated that an increase in glucose reabsorption, via sodium-glucose cotransporter in the kidney, played a role in the pathophysiology of T2D. His work on the pathophysiology of T2D has made metformin and SGLT2 inhibitors the well-accepted first-line medications for T2D management.

Professor DeFronzo also proposed the personalized treatment of T2D by choosing the appropriate medication according to the pathophysiology of diabetes. This concept has been recognized and adopted into current medical practice worldwide. Not only working on the pathophysiology and management of T2D, Professor DeFronzo's work also involves the prevention of T2D. Obesity plays a major role in insulin resistance, therefore reduction of body weight by intensive lifestyle modification and various medications results in the improvement of insulin resistance and delay or prevention of the new onset of T2D.

The achievement of Professor Dr. Ralph A. DeFronzo is the result of bridging and magnifying the research knowledge into the novel pathophysiology of T2D. His exceptional and dedicated works have saved people from T2D and saved millions of T2D patients from chronic diabetic complications.



PRINCE MAHIDOL AWARD LAUREATES 2022



IN THE FIELD OF PUBLIC HEALTH

Douglas R. Lowy, M.D.

Deputy Director
National Cancer Institute, National Institutes of Health, Bethesda,
USA



John T. Schiller, Ph.D.

NIH Distinguished Investigator
Deputy Chief, Laboratory of Cellular Oncology
National Cancer Institute, National Institutes of Health, Bethesda,
USA



Ian Frazer, M.D.

Emeritus Professor
University of Queensland, Brisbane,
Australia



Dr. Douglas Lowy received his M.D. from New York University, USA. Dr. John Schiller received his Ph.D. from the University of Washington, USA. Professor Ian Frazer received his M.D. from the University of Melbourne, Australia.

Drs. Lowy and Schiller worked together at the National Cancer Institute and discovered that the major virion protein of human papillomaviruses (HPV) could self-assemble into virus-like particles (VLPs) and the VLPs could strongly induce protective immune response against the viruses.

Prof. Frazer working at the University of Queensland discovered the VLP self-assembly process. These researchers then developed VLP production processes from recombinant proteins. This led to the development of HPV vaccines using VLPs, which are highly effective owing to the enhanced immunogenicity and the presentation of native antigenic epitopes to the immune system.

The achievements of Drs. Lowy, Schiller, and Frazer have led to the development of HPV vaccines, which have been internationally implemented. The vaccines have prevented HPV infection, cervical cancer and other HPV-related cancers and saved countless of lives.







PMACI2023

SETTING A NEW HEALTH AGENDA

At the House of Change, Environment, and Sustainability



PRINCE MAHIDOL
AWARD CONFERENCE





PRINCE MAHIDOL AWARD CONFERENCE

The Prince Mahidol Award Conference was first organized in 1998 to celebrate the 5th anniversary of the Prince Mahidol Award, then again in 2002 to celebrate the 10th anniversary of the award. To celebrate the 15th anniversary of the award and the 115th Birthday Anniversary of His Royal Highness Prince Mahidol of Songkla, Her Royal Highness Princess Maha Chakri Sirindhorn, President of the Prince Mahidol Award Foundation under the Royal Patronage, requested the conference to be organized annually since 2007.

Since 2007, the Prince Mahidol Award Conference has been organized as an annual international conference focusing on policy-related public health issues of global significance. The conference is hosted by the Prince Mahidol Award Foundation, the Royal Thai Government and other global partners, for example the World Health Organization, the World Bank, the United States Agency for International Development, the Japan International Cooperation Agency, the Rockefeller Foundation, the China Medical Board, and other related UN agencies. The general objective of the annual Prince Mahidol Award Conference is to bring together leading public health leaders and stakeholders from around the world to discuss high priority global health issues, summarize findings and propose concrete solutions and recommendations. It aims at being an international forum that global health institutes, both public and private, can co-own and use for the advocacy and the seeking of international advices on important global health issues. Specific objectives of each year's conference will be discussed among key stakeholders and co-hosts of the conference. The conference participants include ministers, senior government officials, intergovernmental organizations, international development partners, global health initiatives, health policy and health systems researchers and advocates, civil society organizations, and high-level stakeholders from developing and developed countries.

THE PAST AND UPCOMING CONFERENCES INCLUDE:

- 1997: The International Conference Science and Health
- 2002: Medicine and Public Health in the Post-Genomic Era
- 2007: Improving Access to Essential Health Technologies:
Focusing on Neglected Diseases, Reaching Neglected Populations
- 2008: Three Decades of Primary Health Care:
Reviewing the Past and Defining the Future
- 2009: Mainstreaming Health into Public Policies
- 2010: Global Health Information Forum
- 2011: 2nd Global Forum on Human Resources for Health
- 2012: Moving towards Universal Health Coverage: Health Financing Matters
- 2013: A World United against Infectious Diseases: Cross-Sectoral Solutions
- 2014: Transformative Learning for Health Equity
- 2015: Global Health Post 2015: Accelerating Equity
- 2016: Priority Setting for Universal Health Coverage
- 2017: Addressing the Health of Vulnerable Populations
for an Inclusive Society
- 2018: Making the World Safe from the Threats of Emerging Infectious
Diseases
- 2019: The Political Economy of NCDs: A Whole of Society Approach
- 2020: PMAC 2020 / UHC Forum 2020: Accelerating Progress Towards UHC
- 2021: COVID-19: Advancing Towards an Equitable and Healthy World
- 2022: The World We Want: Actions Towards a Sustainable,
Fairer and Healthier Society
- 2023: Setting a New Health Agenda: At the Nexus of Climate Change,
Environment, and Biodiversity
- 2024: Geopolitics, Human Security and Health Equity in an Era of Polycrises



PMAC 2023 SETTING A NEW HEALTH AGENDA

At the Nexus of Climate Change,
Environment, and Biodiversity

24 - 29 JAN 2023
BANGKOK, THAILAND

PRINCE MAHIDOL AWARD CONFERENCE 2023

Setting a New Health Agenda – at the Nexus of Climate Change, Environment, and Biodiversity

The triple planetary crisis, three interconnected crises – ‘Climate Change, Biodiversity Loss, and Pollution’ are putting global health and well-being at risk. They undermine opportunities to reduce poverty, ensure intra- and inter-generational equity and improve lives, and they complicate the response to the COVID-19 crisis.

Addressing and acting on the nexus of climate change, biodiversity loss, and environmental degradation would reduce the risk of current and new health threats, creating a more promising and healthy future for coming generations and not leaving the most vulnerable groups behind. There are salient opportunities for maximizing health co-benefits by addressing inter-linkages and common grounds of social and planetary dimensions for future human- and planet sustainability, creating multi-level conversations and actions to accelerate progress towards the 2030 Agenda.

The Prince Mahidol Award Conference is a powerful global multi-stakeholder platform that can enable complex dialogues, stimulating inter-sectorial and interdisciplinary collaboration among countries, sectors and disciplines, sending positive signals for scaling up efforts to tackle these converging crises, and to improve human and planetary health. PMAC 2023 offers a unique opportunity to address the Triple Planetary Crisis (climate change, biodiversity loss and pollution) and Triple Billion global health burden of people lacking access to health care, needing enhanced protection from health emergencies, and falling behind health and well-being metrics.

The format of PMAC allows deeper dives into several fields within the nexus of climate, biodiversity, pollution and health, with a strong emphasis on policy and private sector accountability and initiatives at all levels; global, national, regional, and community levels. Active engagement with politicians and other decision-makers, academia, and the business sector at this level, PMAC 2023 aims to stimulate action-oriented discussions and pave a strong foundation for collaborative action and decision-making regarding climate, environment and biodiversity for optimal health outcomes.

This year, there are three main sub-themes for the PMAC 2023, including:

Sub-theme 1:

Addressing the Nexus of Climate Change, Environment, Biodiversity and Health Emergencies

Sub-theme 2:

Challenges and Opportunities: Overcoming Challenges and Harnessing Opportunities for Health at the Biodiversity Climate Nexus

Sub-theme 3:

Making a Difference – Taking Action on the Ground

**The PMAC 2023 Conference Program Structure
is given in ANNEX I.**



MESSAGE

FROM THE CHAIRS OF THE INTERNATIONAL ORGANIZING COMMITTEE



We are facing unprecedented and cascading crises at a global scale. As the world attempts to grapple with the health, social and economic impact of the COVID-19 pandemic, widening and deepening inequalities, and the global energy and cost-of living-crises caused by the extraordinary political events of this year, the time to act on the climate crisis is rapidly running out.

The triple planetary crisis – Climate Change, Biodiversity Loss, and Pollution – has been identified as the most significant health threat of the 21st century. It endangers billions of lives and livelihoods across every continent and threatens the very systems upon which we all depend.

The relationship between climate change, biodiversity loss, pollution and human health is complex. It threatens our very existence, as human health and the health of the planet are fundamentally interlinked. It threatens the essential ingredients of good health – clean air, safe drinking water, nutritious food supply, and security – and it undermines decades of progress in global health, poverty alleviation and social development. This is further exacerbated by political instability and ongoing conflict.

Additionally, areas that are predicted to be most affected by the climate crisis are also home to many of the world's poorest and vulnerable communities with limited options or resources to respond and adapt.

Climate change will profoundly affect the lives of every child born today. Current and future generations of young people will suffer the burden of climate change, despite contributing the least to it.

We are deeply concerned about the climate crisis and the health of people and the health of our planet. Our current response to mitigate the effects of the climate crisis is dramatically insufficient. **We have reached a 'code red' for humanity.** Time is crucial and we all must act now to reduce global greenhouse gas emissions and to limit global warming to below 1.5°C to avoid irrevocable damages.

2022 marks the 30th anniversary of the UN Framework Convention on Climate Change, in which countries agreed to prevent man-made climate change and its effects on human health. Yet, the primary source of greenhouse gas emissions that drive climate change, along with other forms of air pollution, the burning of fossil fuels, has changed very little in the past 30 years.

Countries have reached a historic decision at COP27, to establish a loss and damage fund to compensate vulnerable nations, however COP27 failed to meaningfully drive emissions cuts and to include the phasing out of fossil fuels in the final decision text.

AS global health leaders and practitioners, we have a responsibility and an obligation to amplify the voice of reason, to support and advocate for the swift, decisive, and coherent intersectoral action and improved global governance that will be essential to protect human health from the rapidly changing climate. We need to act now to ensure that everyone has an opportunity to thrive while respecting the limits of the Earth's resources.

Prince Mahidol Award Conference 2023

The Conference this year will provide a unique platform to focus on the health impacts of the climate crisis. It provides an excellent opportunity for all stakeholders, including governments, the United Nations System, academic institutions, civil society organizations, professional associations, non-governmental and faith-based organizations, philanthropic foundations, youth activists and the private sector to come together to debate and discuss the most innovative and bold ideas, to propose solutions and forge partnerships to address the triple planetary crisis and its impact on human health at global, regional, national and local levels.

Collectively, we have the responsibility and the chance to set a "New Health Agenda – at the Nexus of Climate Change, Environment, and Biodiversity", and to ensure that we are handing over to future generations a planet that is not only safe but also thriving, both ecologically and socially.

As the Co-chairs of this very important global Conference, we would like to encourage all participants to take full advantage of all the opportunities that PMAC 2023 has to offer. In addition to your participation in the insightful Conference programme that includes plenary discussions and parallel sessions with many renowned speakers, we encourage you to take part in, share your challenges and ideas in an exciting range of pre-conference side meetings where many of the topics covered during the conference will be discussed in greater depth.



Appreciation

We would like to acknowledge and extend our appreciation to the many individuals and organizations, whose tireless efforts helped bring the Conference to life. We especially thank the Prince Mahidol Award Foundation and the Royal Thai Government for their exceptional support and leadership, as well as the PMAC Secretariat for providing their overall guidance, day-to-day support, and an incredible team spirit.

We look forward to welcoming you to Bangkok!

Vicharn Panich

Dr. Vicharn PANICH
Chair
Prince Mahidol Award Foundation

Catherine Russell

Ms. Catherine RUSSELL
Co-Chair
United Nations Children's Fund

Winnie Byanyima

Ms. Winnie BYANYIMA
Co-Chair
Joint United Nations Programme
on HIV/AIDS

Naoko Yamamoto

Dr. Naoko YAMAMOTO
Co-Chair
World Health Organization

Juan Pablo Uribe

Dr. Juan Pablo URIBE
Co-Chair
The World Bank

Haoliang Xu

Mr. Haoliang XU
Co-Chair
United Nations Development
Programme

Marijke Wijnroks

Dr. Marijke WIJNROKS
Co-Chair
The Global Fund to Fight AIDS,
Tuberculosis and Malaria

Osuke Komazawa

Dr. Osuke KOMAZAWA
Co-Chair
Japan International Cooperation
Agency

Atul Gawande

Dr. Atul GAWANDE
Co-Chair
United States Agency for
International Development

Barbara J. Stoll

Dr. Barbara J. STOLL
Co-Chair
China Medical Board

Naveen Rao

Dr. Naveen RAO
Co-Chair
The Rockefeller Foundation

David Harper

Dr. David HARPER
Co-Chair
Chatham House

Fran Baum

Dr. Fran BAUM
Co-Chair
People's Health Movement



CONFERENCE CO-HOSTS AND SUPPORTING ORGANIZATIONS

A full list of the PMAC 2023 International
Organizing Committee Members
is given in ANNEX II.



OPENING SPEECH & MESSAGE



HER ROYAL HIGHNESS PRINCESS MAHA CHAKRI SIRINDHORN

CHAIRMAN, BOARD OF TRUSTEES AND PRESIDENT,
PRINCE MAHIDOL AWARD FOUNDATION

I am very pleased to join you today at the Prince Mahidol Award Conference 2023 on the theme of “Setting a New Health Agenda – at the Nexus of Climate Change, Environment and Biodiversity”.

As the Chair of the Prince Mahidol Award Foundation, it is my great honor to host this conference and present critically complex issues of the health–environment nexus. There is no doubt that our global environment holds today a great importance in human health. Atmospheric changes, environment depletion, loss of biodiversity and other changes in the Earth’s natural systems negatively affect people’s health and ecosystems in diverse ways. We carry global responsibilities and need to step up action to confront these shared challenges. To this end, this conference will elaborate on key dimensions to understand the true dynamics and complexities of the deep interconnectedness between human and planetary health, and identify common drivers and impact opportunities from sector policies to ensure synergies between and within public health, social and environmental agendas. We believe that this can be one of the critical transitions the outcome of which will have a vital impact on the future of the world health.

I would also like to express sincere appreciation directly to our co-hosts and partners – the World Health Organization, the World Bank, the United Nations Development Programme, the United Nations Children’s Fund, the United Nations Population Fund, the Joint United Nations Programme on HIV/AIDS, the Global Fund to Fight AIDS, Tuberculosis and Malaria, the United States Agency for International Development, the Japan International Cooperation Agency, the China Medical Board, the Rockefeller Foundation, the Chatham House, the People’s Health Movement, the Swedish Institute for Global Health Transformation, the Bill & Melinda Gates Foundation, the National University of Singapore, the British Medical Journal, FHI360 and the International Federation of Medical Students Associations. They have been a big part of efforts that make the conference a solid ground for collaborative mechanisms to strengthen health and planet systems.

I wish you have a very productive meeting and reach the conference’s objectives in the best interest of human and environmental health. I now declare the Prince Mahidol Award Conference 2023 open.

MESSAGE

FROM THE UNITED NATIONS SECRETARY-GENERAL FOR PMAC 2023

António Guterres

United Nations Secretary-General



Humanity is facing a triple planetary crisis. Climate change is supercharging extreme weather events and increasing the risks of infectious disease outbreaks. Biodiversity loss is destroying livelihoods, causing hunger and forcing people from their homes. And air pollution is killing millions every year.

Nature is our life-support system. By destroying nature, we are destroying our very health.

The world must act now to avert climate catastrophe. Governments must phase out fossil fuels and transition to renewable energy. Developed economies and international financial institutions must support developing countries' adaptation and mitigation efforts. Climate finance must reflect global ambition and justice. The private sector must fully commit to a net zero future.

Climate action will also improve air quality and reduce the risk of noncommunicable diseases. We must adopt nature-friendly production and consumption models and invest in resilient food, water and sanitation systems. We must raise awareness through community engagement to further reduce health risks.

And we must learn the lessons of the COVID-19 pandemic and provide equitable access to vaccines, treatments, diagnostics and life-saving technology to every country.

I thank the Prince Mahidol Award Conference for your commitment to global health and look forward to your contributions for a healthier and more sustainable future for all.

Prince Mahidol Award Conference (PMAC)

was initiated in 2007 as an annual global conference focusing on globally important public health issues that interlinked with policy. The PMAC 2023 theme “Setting a New Health Agenda—at the Nexus of Climate Change, Environment, and Biodiversity”, aimed to discuss and propose solutions on impacts of climate change on population health and the future of humanity. The conference was attended by multidisciplinary experts from the policy to implementation levels and from multisectoral affiliations, private, public, and civil society.



The main conference began with a video “PMAC 2023: Making the World a Better Place, Making Yourself a Better Person”

which highlighted the devastating effects of climate change on our planet and the daily struggles that people are facing. It emphasized the far-reaching consequences of climate change such as zoonotic and re-emerging diseases, heat-related mortality, air pollution-related diseases, and food contamination. Despite the magnitude of the problems, the video encourages its audiences to start first with individual action and keep the hope.

The full VDO is available on YouTube





PMAC | PRINCE MAHIDOL
AWARD CONFERENCE

The Prince Mahidol Award Armchair Conversation with the **Pioneers in the Fields of Diabetes and Human Papilloma Virus Vaccine**



Ralph A. DeFronzo, M.D.



Douglas R. Lowy, M.D.



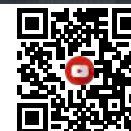
John T. Schiller, Ph.D.



**Pavit Pienvichitr, M.D.
(Moderator)**



The PMA Armchair Conversation (English subtitle)
is available on YouTube.



The PMA Armchair Conversation (Thai subtitle)
is available on YouTube.



PMAC|2023

SETTING A NEW HEALTH AGENDA
At the Nexus of Climate Change, Environment, and Biodiversity

24-29 January 2023 | Bangkok, Thailand



PRINCE MAHIDOL
AWARD CONFERENCE

KEYNOTE
ADDRESSES

Vandana Shiva,

Founder, Research Foundation for Science,
Technology and Ecology,
India

A video presentation from Dr. Vandana Shiva, Founder of the Research Foundation for Science, Technology and Ecology, India, to share her life-long experiences and advocating planetary health. Dr. Shiva's aspiration brings in an advanced roadmap to create a more sustainable world for current and future generations.

Time Magazine identified Dr. Shiva as an environmental “hero” in 2003 and Asia Week has called her one of Asia’s five most powerful communicators.

Forbes magazine in November 2010 identified Dr. Vandana Shiva as one of the top seven most Powerful Women in the Globe.





Banthoon Lamsam,

Chairman Emeritus of Kasikornbank,
Thailand

Mr. Banthoon Lamsam provided his keynote address on the initiation of the Nan Sandbox Program, an integrative model for forest protection, which follows the legacies of King Rama the Great in promoting sustainable livelihoods and well-beings of the locals and beyond.

Mr. Lamsam is currently the Chairman Emeritus of Kasikornbank, Thailand, and was the former Chief Executive Officer of Kasikornbank. Mr. Lamsam has shifted himself to be fully committed as a 'conservator of Nan pristine headwater forest' and dedicates his time to solving the problem of deforestation in Nan province, his newly adopted hometown.

Mr. Banthoon Lamsam received his Bachelor's Degree in Chemical Engineering from Princeton University and his MBA from Harvard University. After retirement from Kasikornbank, the board bestowed on him the honorary title of "Chairman Emeritus".



SESSIONS AT
A GLANCE



PLENARY SESSION 0

Setting a New Health Agenda – at the Nexus of Climate Change, Environment, and Biodiversity



“Mother Earth is the most beautiful healer.

Mother Earth gives us this shelter, gives us food.

She gives air to breathe. She gives us water.

As a mother, she produces enough for everyone.”

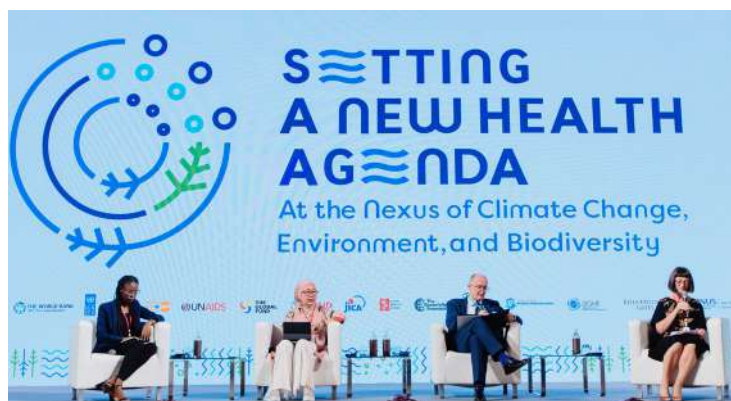
- Vivian Camacho -



Andri Snaer Magnason
Banthoon Lamsam
Omnia El Omrani
Vivian Camacho
Richard Horton

PLENARY SESSION 1

Living within Limits – A Remedy for Climate Change, Biodiversity Loss, Pollution, and Health?



“The pathway forward is increasingly scientifically clear. We need to cut emissions by half every decade.”

- Jemilah Mahmood -



“It is not too late to act, but transformative change is needed to achieve sustainability.”

- Anne Larigauderie -



Abigail Johnson
Alexandre Antonelli
Anne Larigauderie
David Daly
Jemilah Mahmood
Johan Rockström
Sharon Friel

PARALLEL SESSION 1.1

Climate Injustice: Ethics, Distributions, Fairness, and Justice



PARALLEL SESSION 1.2

Climate Change Communication



PARALLEL SESSION 1.3

Transformation of Fossil Fuels and Health (Energy and Health)



PARALLEL SESSION 1.4
Elevating the Voices
of Young People
for Climate Action



PARALLEL SESSION 1.5
Climate Inaction:
Power, Politics,
and Political Economy



PARALLEL SESSION 1.6
Metric and
Measurement



PLENARY SESSION 2

Overcoming Challenges and Harnessing Opportunities for Health at the Biodiversity-Climate Nexus



**"Make peace with nature
- work with nature not against it."**
- Kobie Brand -



**"We hope by 2030 to reach a world of peace,
prosperity and inclusion, and leaving no one behind."**
- Lavetanalagi Seru -



David Nabarro
Kobie Brand
Lavetanalagi Seru
Maria Neira
Vandana Shiva
Dennis Carroll

PARALLEL SESSION 2.1
Food System
Transformation:
Challenges (Part 1)



PARALLEL SESSION 2.2
Inter-sectoral,
Multi-sectoral
Approaches:
Challenges (Part 1)



PARALLEL SESSION 2.3
Integrating Health
into Nature-based
Solutions



PARALLEL SESSION 2.4
Food System
Transformation:
Opportunities (Part 2)



PARALLEL SESSION 2.5
Inter-sectoral,
Multi-sectoral
Approaches:
Opportunities (Part 2)



PARALLEL SESSION 2.6
Mobilizing Financial
Resources for Climate
and Health



PLENARY SESSION 3

Making a Difference: Taking Action on the Ground



“Investing in restoring degraded land also makes a lot of economic sense at ROI between 7 to 30 USD in benefits, so it’s also about understanding that there’s has also an economic area.”
- Andrea Meza Murillo -



“One health

is not only human, livestock, and planet, but also plant health.”
- Vanida Khumnirdpetch -



**Andrea Meza Murillo
Anjali Kaur
Keizo Takemi
Omnia El Omrani
Vanida Khumnirdpetch
Agnes Binagwaho**

PARALLEL SESSION 3.1 Political and Social Movements



PARALLEL SESSION 3.2 Transforming the Economy for Health Equity and Environmental Sustainability



PARALLEL SESSION 3.3 Multi-sectorial Policies and Practices: Mitigation



PARALLEL SESSION 3.4
Social Movements:
Their Role in Advocating
to Reduce the Negative
Health Effects
of Climate Change



PARALLEL SESSION 3.5
How Do We Reduce the
Impact of Healthcare on
the Environment?



PARALLEL SESSION 3.6
Multi-sectoral Policies
and Practices:
Adaptation



Synthesis: Summary, Conclusion and Recommendations



Viroj Tangcharoensathien
Abigail Johnson
Diarmid Campbell-Lendrum
Loreta Rufo



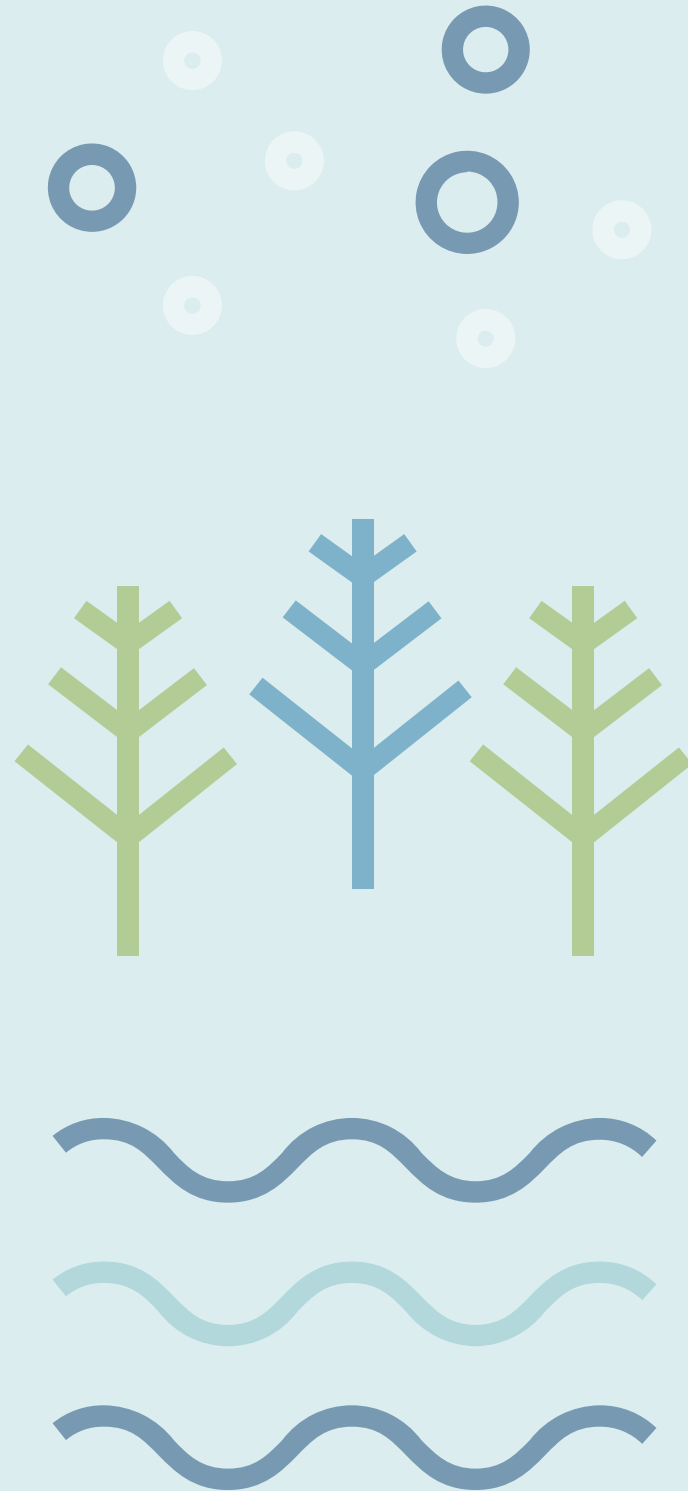
Closing Session

Benita Kayembe
Chee Yoke Ling
Fran Baum
Naveen Rao
Rajiv Shah
Peter Friberg



CONFERENCE SYNTHESIS

The triple interconnected planetary crises of Climate Change, Biodiversity Loss, and Pollution have been recognized as significant threats to humanity, impeding progress towards achieving the Sustainable Development Goals (SDGs) by 2030. Deliberations at PMAC 2023 highlighted 3 main issues.





1

Beyond Planetary Limit: Human Extinction

Different dimensions of the planetary boundaries

have been challenged by anthropogenic drivers in different ways as shown in Figure 1. Scientific evidence suggests land/sea use change has been the dominant direct driver of recent biodiversity loss worldwide. Direct exploitation of natural resources ranks second and pollution third. Addressing global biodiversity loss requires policies and actions to tackle all the major drivers and their interactions, not some of them in isolation.

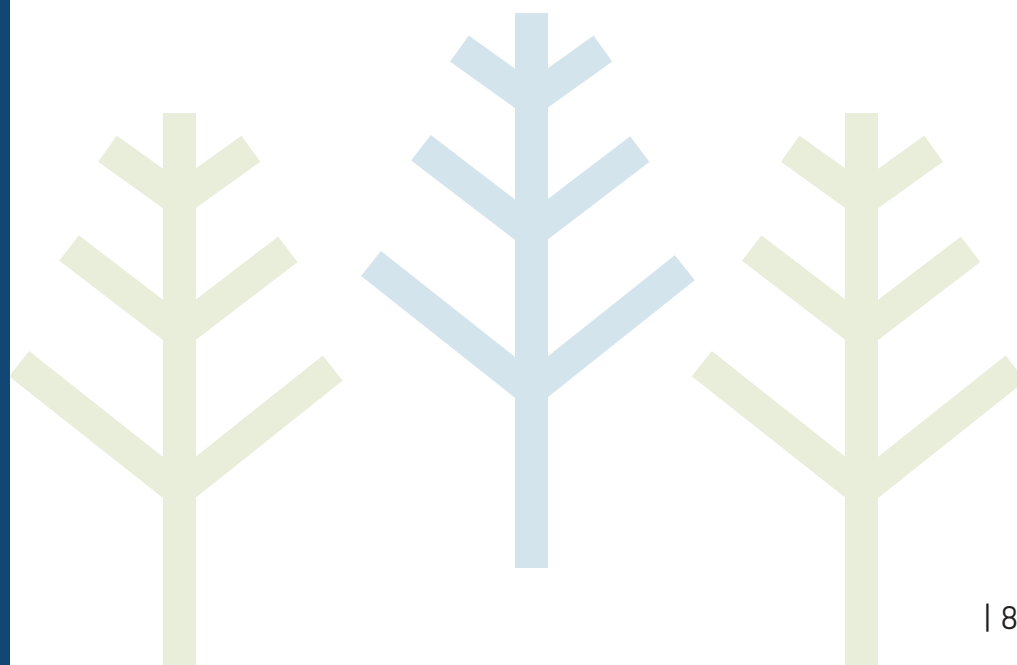
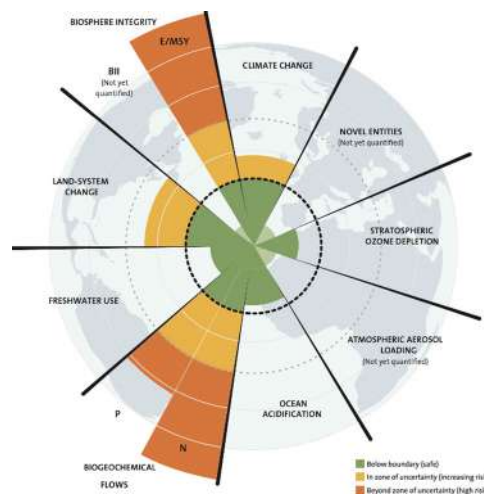


Figure 1:
Different dimensions of planetary boundaries and level of challenges



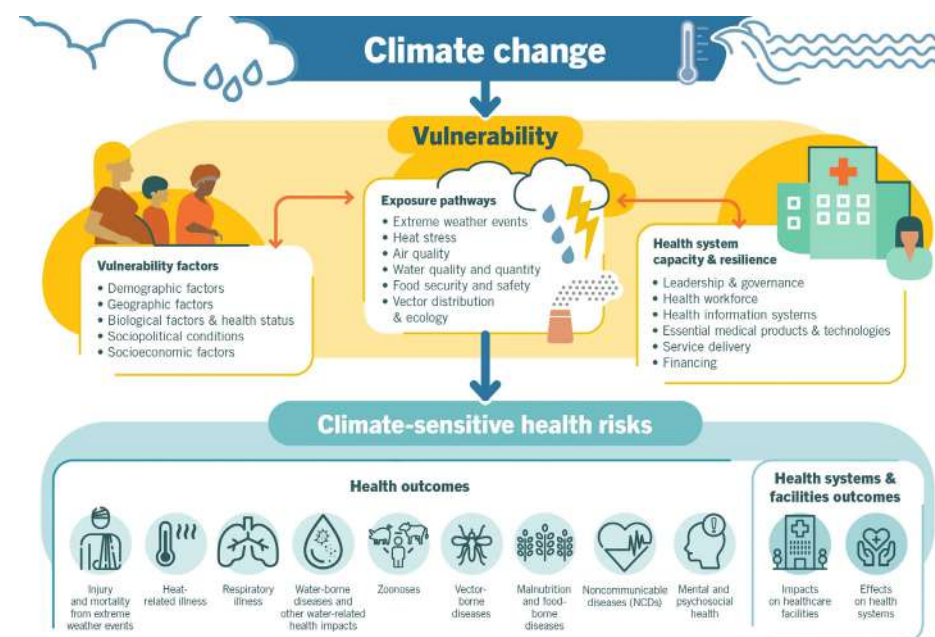
Source: Steffen W, Richardson K, Rockström J, Cornell SE, Fetzer I, Bennett EM, et al. Planetary boundaries: Guiding human development on a changing planet. *Science* (80-) [Internet]. 2015 Feb 13 [cited 2023 Apr 11];347(6223). Available from: <https://www.science.org/doi/10.1126/science.1259855>

PMAC 2023 discussions centered around biodiversity loss; the loss of animal and plant species, expansion of monocrop agriculture, and erosion of crop genetic diversity through deforestation and industrialization of agricultural land for industry, tourism, or residential purposes. Loss of crop genetic diversity has major impact on productivity, resilience and adaptive capacity of agriculture.

Participants also discussed climate change as a major cause of global temperature rising, warmer oceans, shrinkage of ice sheets, retreating glaciers, rises in sea level, heatwaves, storms, and drought. These effects are intensified by emerging air pollution issues resulting from fossil fuel combustion and increased levels of particulate matter (PM) 2.5 and 10, carbon monoxide, lead, ground-level ozone, nitrogen dioxide, and sulfur. The ocean also faces acidification with pH levels expected to drop from 8.1 to 7.7 by the end of the 21st century, the fastest drop in 50 million years.

Climate change has direct and indirect impacts on health, which are influenced by individual and system factors. These impacts can be described as climate-sensitive health risks (see Figure 2).

Figure 2:
A summary of climate-sensitive health risks, the ways in which people are exposed to them, and the factors that make people more vulnerable.



Source: World Health Organization. Climate change and health [Internet]. World Health Organization. 2021 [cited 2023 Apr 11]. Available from: <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>

Climate change affects health in both direct and indirect ways, and its effects are greatly influenced by environmental, social, and public health factors.

The **Asia-Pacific region** is facing significant risks to the health and well-being of its people due to loss of biodiversity and climate change.

In the **Mekong River basin**, studies show that if the construction of **78 dams** in tributaries and the main Mekong River was completed, biodiversity loss and decreased fish biomass would adversely **affect vulnerable population groups whose livelihoods depend on natural fishing** in this river system.

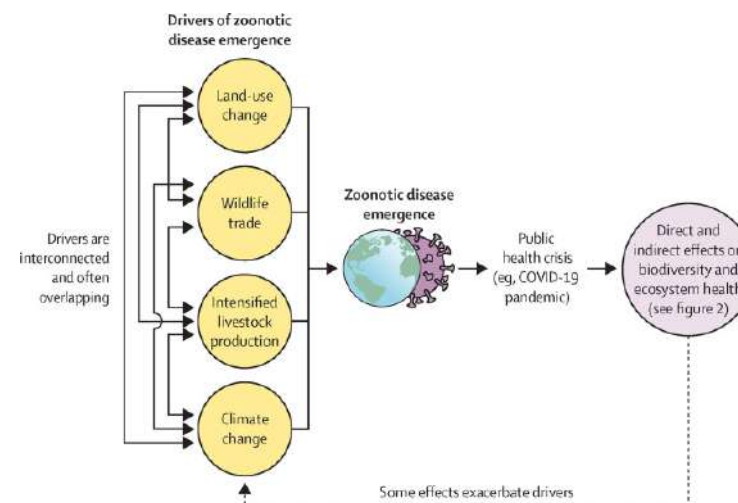
Furthermore, people well-being is jeopardized by extreme weather conditions such as **floods and droughts, low air quality, unhealthy food, and diseases** that emerge and spread due to environmental changes, such as dengue fever.

According to the World Health Organization, almost a quarter of the worldwide burden of **environmental diseases** arise from 14 East and Southeast Asian nations. These natural and biological hazards could lead to **collective expenses exceeding \$7 trillion annually in the Asia-Pacific region** in the coming years.

The **COVID-19 pandemic** is an example of a direct impact of human activities on human health. Changes in land use, wildlife trading, intensive livestock production, and climate change are all human-caused factors contributing to the emergence of zoonotic diseases that have the potential to trigger public health crises. The impact of such crises could be detrimental to biodiversity and ecosystem health, as was seen with COVID-19. This could further worsen the human-caused drivers of zoonosis, leading to the emergence of more diseases and future health crises with their own set of repercussions. This cycle would perpetuate a positive feedback loop with significant implications for human health, economies, society, and the environment (see Figure 3). It is therefore crucial to address the root causes of zoonotic disease emergence and take action to mitigate these risks to prevent future pandemics.

Figure 3:

Zoonotic disease emergence feedback loop



Source: Lawler MConsBiol OK, Allan HL, J Baxter PW, Castagnino MConsSci R, Corella Tor MSci M, Dann LE, et al. The COVID-19 pandemic is intricately linked to biodiversity loss and ecosystem health. *Lancet Planet Heal* [Internet]. 2021 Nov 1 [cited 2023 Apr 11];5(11):e840–50. Available from: <https://europepmc.org/articles/PMC8580505>

Pandemic responses significantly affect the environment; globally there was more than eight million tons of pandemic-associated plastic waste with >25,000 tons entering the ocean. These plastic wastes are mostly medical waste, disposable personal protection equipment and online-shopping package material. Non-degradable plastic brings a serious impact to the ocean ecosystems and threat to the entire environmental ecosystem.

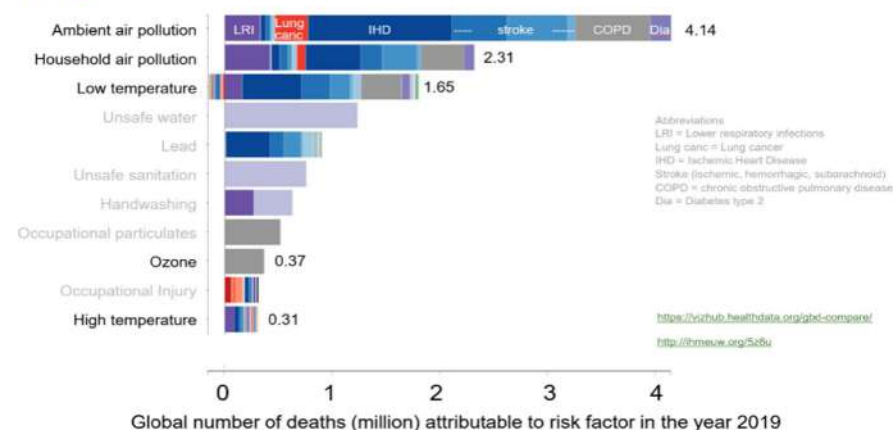
Climate change has long been recognised as a major threat to global health.

The Lancet Countdown working group has documented a rising trend in the impact of climate change on both physical and mental health worldwide resulting from exposure to air pollution, extreme weather events, and changes in infectious disease patterns. However, these impacts vary across countries. Countries with Low Human Development Index (HDI) face numerous challenges such as low health system preparedness and limited access to clean households and renewable energy. The disparities of climate action across nations and its effect on health between nations are critical issues that need to be addressed intensively.

The Institute for Health Metrics and Evaluation (IHME) estimated the global mortality from environmental risk factors (see Figure 4). Ambient air pollution and household air pollution are the top two risk factors which contributed to 4.14 million and 2.31 million deaths worldwide in 2019. Eliminating environmental and non-communicable disease (NCD) risk factors by 2050 could decrease global mortality by 15%, achieved through measures such as reducing GHG emissions, promoting sustainable land use, and increasing access to clean energy sources.

Figure 4:
Global burden of diseases related to environmental risk factors


Top global environmental risk factors GBD 2019



Source: Institute for Health Metrics and Evaluation. GBD Compare [Internet]. University of Washington. 2023 [cited 2023 Apr 11]. Available from: <https://vizhub.healthdata.org/gbd-compare/>

Children are among the most vulnerable groups affected by climate change. Approximately 1 million children live in extremely high-risk countries, facing challenges such as malnutrition, water scarcity, and disease outbreaks. Despite this, there are no specific policies focused on protecting children from the effects of climate change which needs to be urgently addressed.

The nexus of health and climate change is unequivocal. While the health sector has historically fallen short in addressing climate change, the Rio+20 United Nations Conference on Sustainable Development in June 2012 emphasized the monumental impact of environmental health on our well-being. As such, health plays a crucial role as both a precondition and an outcome indicator of all three dimensions of sustainable development, a notion that was extensively discussed and explored during the PMAC 2023 conference.



2

Root Causes of Climate Inaction

The challenges posed by climate inaction are multifaceted, far-reaching, and long-lasting.

This requires a deep understanding of the intricate relationship between economic, political, and social factors. Economic factors such as high cost of renewable energy, investment in carbon-intensive industries, and lack of incentives for sustainable practices hinder implementation towards a low-carbon economy. Political factors, including the absence of effective policies, geopolitical conflicts, and international agreements, further complicate efforts to tackle climate change. Social factors such as public attitudes, behaviors, and values towards environmental conservation also play a critical role in shaping the trajectory of climate action. These factors present plausible explanations for the delay of climate change in actions; however, explicit examples are listed below.

The 27th Conference of Parties (COP27) of the United Nations Framework Convention on Climate Change (UNFCCC) has underlined a lack of progress.

The primary reason is the absence of political will to take strong and ambitious action to combat climate change. Many countries are hesitant to commit to emissions reductions that may negatively impact their economies.

Additionally, some countries, major contributors to global emissions, **withdrew their support** from both the Paris Agreement and the World Health Organization, undermining the international effort to mitigate climate change.

Furthermore, the COVID-19 pandemic has resulted in economic downturns and fiscal constraints, **making it difficult for many countries to commit large resources** to climate change mitigation efforts while they focus on economic recovery and balance with other programs competing with limited fiscal space.

These factors have created a challenging environment for COP27 and threaten to undermine efforts to combat climate change on a global scale.

One of the major barriers to effective action on climate change is the lack of political will.

Politicians and decision-makers are often focused on short-term and tangible political gains which may not align with the long-term goals of combating climate change and continued investment in climate actions. As a result, climate actions may seem less appealing to politicians and may not receive the priority they deserve. Additionally, lobbying by industries is another significant obstacle to progress, using significant financial resources to influence politicians and decision-makers, which can lead to policies that prioritize the industries' interests over the needs of the planet and its inhabitants.

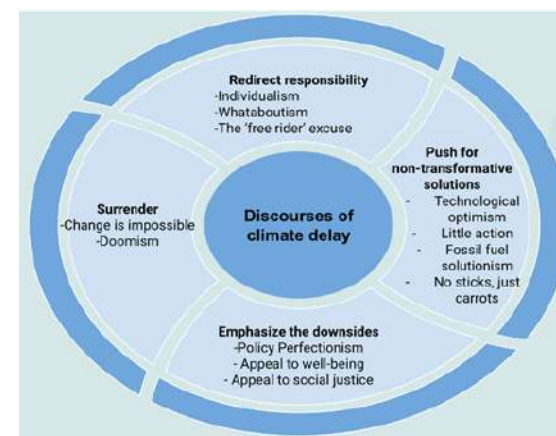
Cross-nation disparity of capacity to invest in climate actions and lack of global cooperation explain the inadequacy in global efforts to address climate change as reflect by the slow progress of the Paris Agreement.

There is also inadequate international support to address these barriers. Low- and middle-income countries are particularly vulnerable to the negative effects of climate change and are often exploited by high-income countries. Additionally, many countries have limited capacity and financial, technical, and institutional resources for effective implementation of adaptation and mitigation measures. As a result, the need to prioritize poverty reduction and economic growth further complicates the situation, leaving climate change as a secondary concern.

First, discourses that delay climate action are pervasive and diverse circulated widely through various sources and channels, actors, and contexts. Four such discourses are: those that redirect responsibility, those that push for non-transformative solutions, those that emphasize the downsides, and those that surrender. Identifying the key features of these discourses is crucial for improving public deliberation and policy-making on this urgent issue. (See Figure 5) Redirecting responsibility consists of individualism, whataboutism, and the free rider excuse. Individualism narrows the solution space to personal choices, while whataboutism argues that other countries or sectors produce more emissions and thus should act first. The free rider excuse discourse claims that others will take advantage of those who lead on climate change mitigation. These discourses set unrealistic conditions for acting, downplaying the advantages gained by collaborating.

Second, the push of non-transformative solutions refers to several actions including technological optimism, which promotes ineffective solutions and fails to acknowledge disruptive approaches. Fossil fuel solutionism is another discourse that is at the heart of fossil-related industry's pushback against regulation. Another is all talk-little action, leading to narrow definitions of success and downplays the need for more stringent or new types of transformative actions. The discourse of 'no sticks, just carrots' argues that we should only pursue voluntary policies, arguing that restrictive measures are too paternalistic and counterproductive. These discourses tend to avoid transformative efforts and introducing / enforcing binding standards, leveraging narrow definitions of success and positive framings

Figure 5:
Modified from a typology of climate delay discourses



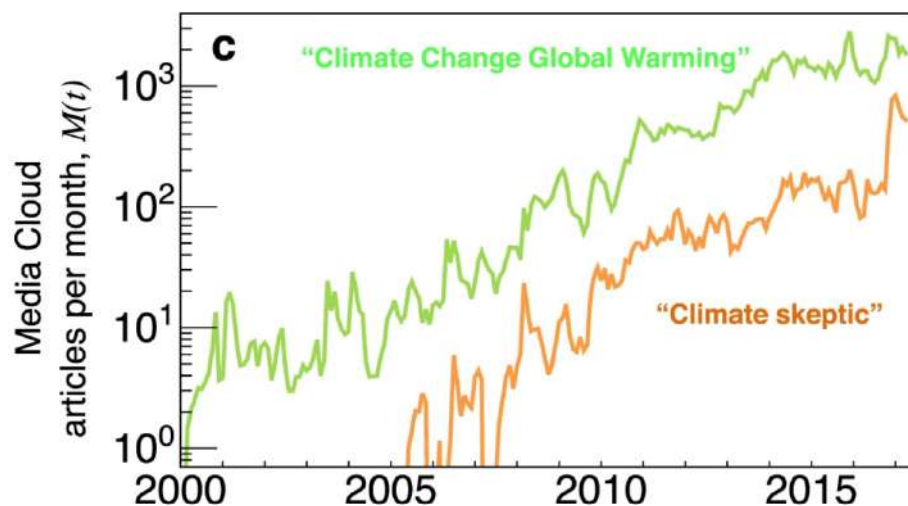
Source: Lamb WF, Mattioli G, Levi S, Timmons Roberts J, Capstick S, Creutzig F, et al. Discourses of climate delay. Glob Sustain [Internet]. 2020 [cited 2023 Apr 11];3:e17. Available from: <https://www.cambridge.org/core/journals/global-sustainability/article/discourses-of-climate-delay/7B1B722E3E3454B-B6212378E32985A7>

Third, emphasizing the downsides that climate mitigation will affect the livelihood of low-income populations, marginalized communities, and developing countries. However, climate policies can also bring benefits, such as improved public health, regional development, and employment opportunities, which the discourse intentionally does not address. Conservative approaches to climate policymaking can also result in delayed strategies that ignore the need for outreach work and public deliberation to build support towards more ambitious solutions.

Finally, the surrender discourse emphasizes the challenges and doubts related to the feasibility of climate mitigation. This can be due to the belief that change is impossible, which stops societies from transforming and encourages non-transformative measures. Doomists argue that climate change is already irreplaceable, resulting in a paralyzing state of shock and resignation. Thus, these discourses do not prioritize building climate engagement and effective solutions.

Misinformation and denial are significant obstacles to effective climate mitigation efforts. Climate contrarians, who deny the scientific consensus on climate change, have gained visibility in the media in recent years despite the overwhelming evidence that supports the reality of anthropogenic climate change. According to a study published in Nature Communications, the denial of scientific consensus is a well-funded, through organized campaigns which aimed at creating confusion and doubt among the public and policymakers (see Figure 6).

Figure 6:
Total number of media articles indexed by Media Cloud
(per month, across all media sources), comparing message
on “global warming” with “climate skepticism”



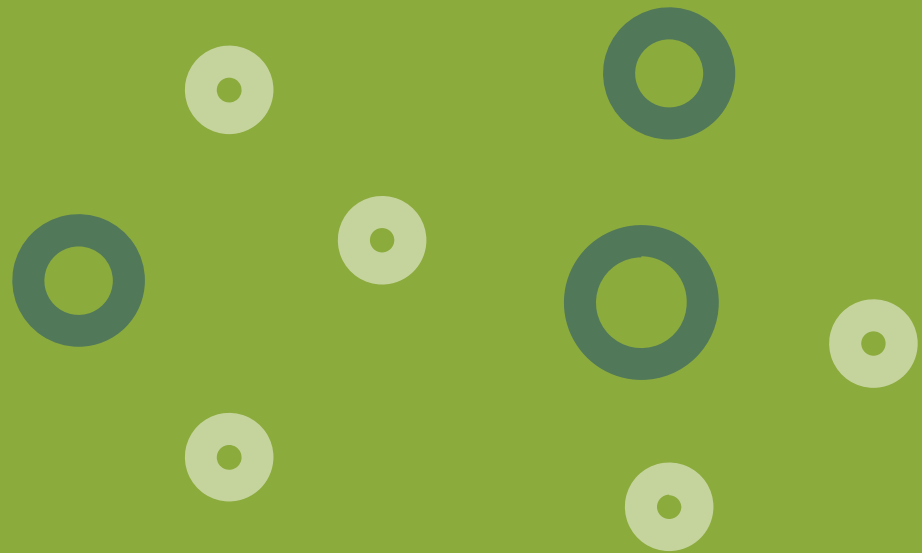
Source: Petersen AM, Vincent EM, Westerling ALR. Discrepancy in scientific authority and media visibility of climate change scientists and contrarians. Nat Commun 2019 101 [Internet]. 2019 Aug 13 [cited 2023 Apr 11];10(1):1–14. Available from: <https://www.nature.com/articles/s41467-019-09959-4>

Furthermore, the growth of social media has amplified the problem of misinformation and denial.

A recent study published in Nature Climate Change shows that social media platforms have become highly polarized around climate change issues, making it difficult to distinguish facts from opinions and leading to the spread of misinformation and conspiracy theories. This can result in decreased public support for effective climate change policies and delay much needed actions.

Finding ways to address climate change raises multiple dilemmas. One of them is the trade-off between reducing emissions or focusing on climate adaptation.

Mitigation efforts aim at reducing GHG emissions to limit the extent of climate change while adaptation efforts aim at helping society adjust to the changes that are already occurring or expected to occur. Climate contrarians argue against mitigation efforts, casting doubt on their cost-effectiveness and feasibility. They also question the transition to renewable energy, citing a lack of scientific certainty and claiming that it would have negative impacts on the economy, in particular increasing energy costs and decreasing economic growth.



3

Potential Solutions

In the context of inadequate progress as voiced

by UN Climate Change Conference at the COP26 and 27th of the United Nations Framework Convention on Climate Change (UNFCCC) and COP15 of Conventional on Biological Diversity, the participants at PMAC 2023 called for immediate climate actions. Possible solutions are illustrated in Figure 7.

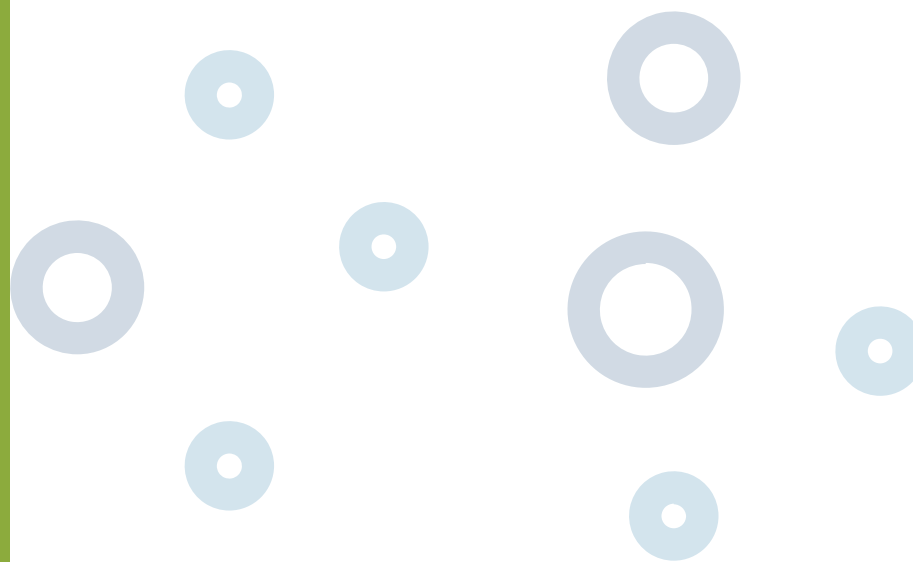
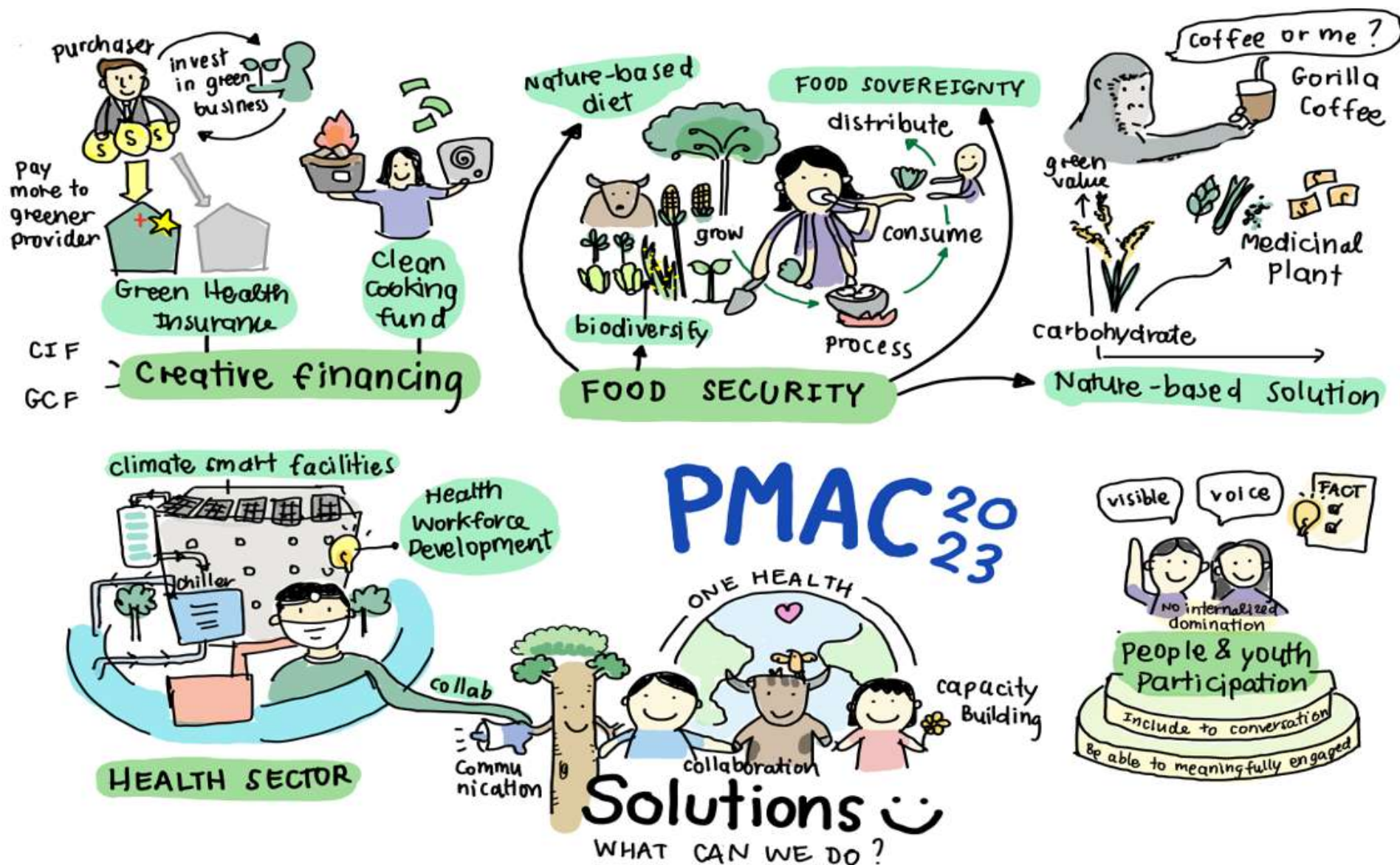


Figure 7:
Summary of possible solutions from PMAC 2023



Source: Drawn at the Conference by Major Thanasak Thumbuntu

1

Promoting Sustainable Agricultural Practices for Food Security

Sustainable agricultural practices and reduced food waste could lower GHG emissions and help stabilize global temperatures. Encouraging sustainable farming practices reduces the carbon footprint of agriculture, promotes biodiversity, and reduces environmental degradation. This can include promoting regenerative agriculture, which focuses on empowering community-based food systems, increasing biodiversity, and building soil health.

A study estimates positive impacts of natural climate solutions such as conservation, restoration, and improved land management actions that increase carbon storage and/or avoid GHG emissions across global forests, wetlands, grasslands, and agricultural lands. The natural climate solutions offer a powerful set of options for nations, at affordable cost, to implement the Paris Climate Agreement while improving soil productivity, cleaning our air and water, and maintaining biodiversity.

Food sovereignty - the right of people to control their own food systems, including the way food is produced, distributed, and consumed, and conservation of crop genetic diversity. Food sovereignty emphasizes the importance of local and community-based food systems, as well as the need for sustainable and equitable agricultural practices. For example, local and community-based food systems tend to rely on smaller-scale and more diversified farming methods that are less reliant on fossil fuels and chemical inputs. In addition, food sovereignty helps build resilience to the impacts of climate change, such as droughts, floods, and other extreme weather events by promoting diverse and locally adapted crops and farming practices to ensure that communities have access to a variety of nutritious foods. Transforming from monoculture farming to biodiversification promotes sustainable agricultural practices by promoting biodiversity conservation, reducing the need for chemical inputs, and improving soil health. Diverse farming systems can sequester more carbon in the soil and plants, which can help mitigate the effects of climate change. Biodiversification can also help reduce GHG emissions associated with agricultural activities.

For example, reducing the use of synthetic fertilizers and pesticides, which are energy-intensive to produce, transport, and apply, can reduce carbon footprint. By promoting soil health, biodiversification can improve the ability of the soil to store carbon, support plant growth, and reduce erosion.

FAO estimates 75% of crop diversity has been lost between 1900 and 2000. Further, 22% of the wild relatives of important food crops of peanut, potato and beans is predicted to disappear by 2055 because of a changing climate. Conserving crop landraces diversity, where there are genes for adaptation to stressful environments such as water stress, salinity, and high temperatures, are critical for the development of improved cultivars. Rediscovery of Landraces can be a critical resource for the future food system.

The Paris Agreement's goal of limiting the rise in global temperature to 1.5° or 2°C above pre-industrial levels requires immediate reductions in GHG emissions.

Achieving these targets requires multi-level food systems action.

Figure 8 illustrates the effect of the food system on climate change;

the bars in the graph (yellow, gray, orange, and brown) represent different food system changes that can lead to a reduction in GHG emissions equivalent to 1.5°C. The blue bars indicate the current level of emissions.

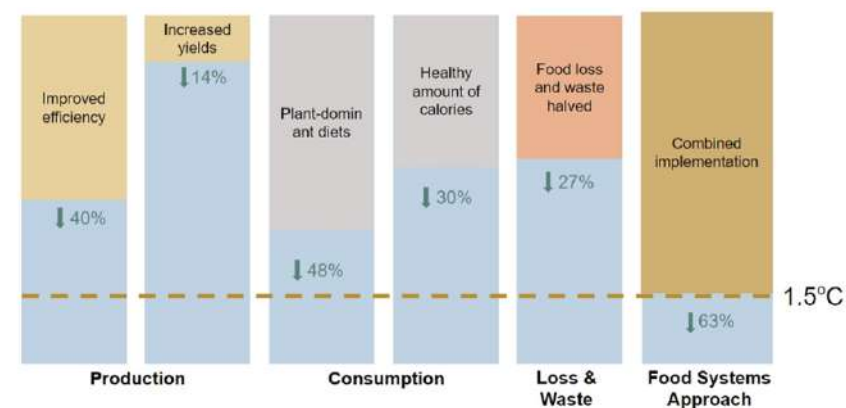
Yellow bars illustrated improve efficiency in food production and reduce GHG emissions by 40% per unit of food produced, while increasing yields has lower impact, 14% above the current maximum yields. Various food production can mitigate climate crisis such as better fertilizer management, and technology advancements, such as targeted fertilizers or additives to cattle feed. All countries must close existing yield gaps and extend the yields beyond the current potential which would require significant advancements in bioengineering and increased crop genetics diversity.

The gray bars signify changes in food consumption patterns. Shifting towards a plant-dominant diet with an average daily caloric intake of 2,100 kcal per person and maintaining a healthy body mass index of 22.5 can reduce emissions by 48%. This would require reducing meat and dairy consumption in high and middle-income countries.

The orange bar represents a reduction in food loss and waste by half through both incremental and transformational adaptation that may stem from better infrastructure (storage and food processing) and adoption of harvest and post-harvest technologies that minimise food waste. Implementing these strategies can reduce the amount of food that is lost or wasted throughout the food supply chain, from farm to plate, which would not only reduce GHG emissions by 27% but also increase the availability of food for those who need it most.

The brown bar shows the combined effect of all five strategies on food systems reforms in achieving the aforementioned Paris Agreement goal, accounting for 63% of reduction in GHG emissions. While each strategy contributes to reducing emissions, combining them can make a significant difference in creating a more productive, low-impact, sustainable, and nutritious food system that benefits both human health and the environment.

Figure 8:
Different interventions in food system which mitigate GHG emission



Source: Clark MA, Domingo NGG, Colgan K, Thakrar SK, Tilman D, Lynch J, et al. Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets. Science (80-) [Internet]. 2020 Nov 6 [cited 2023 Apr 11];370(6517):705–8. Available from: <https://www.science.org/doi/10.1126/science.aba7357>

2

Introducing a Nature-based Diet and Nature-based Solution (Prioritize Nature in All Solutions)

Adopting a nature-based diet, a focus on whole foods and minimally processed foods, is another approach to promoting a sustainable and healthy food system. This involves consuming a variety of plant-based foods that are in season and grown in a way that minimizes harm to the environment. This type of diet is not only healthier for individuals but can also help to reduce the carbon footprint of agriculture. Encouraging consumers to choose plant-based options can help to reduce the demand for animal products, which have a higher carbon footprint.

Nature-based solutions

refer to a range of approaches that harness the power of nature to address environmental challenges, including climate change.

The way to address air pollution, mental health problems, food security, and nutrition is through nature-based solutions and collaboration and knowledge-sharing among various partners

such as public health experts, environmental and climate practitioners, policymakers at the national and international level, and local and indigenous communities.

Nature-based solutions can help to identify real problems and maximize synergies

between public health, climate change adaptation, and nature conservation, with a focus on shared common goals.

The implementation of nature-based solutions should be based on good governance and equity to ensure success.

Nature-based solutions offer a cost-effective and sustainable approach to addressing climate change by promoting the use of natural systems and processes to provide multiple benefits for people and the environment. Some examples were discussed in the conference.

The Gorilla Coffee Alliance is a program that aims to improve the quantity and quality of coffee harvests in the Kahuzi-Biega National Park in the Democratic Republic of Congo. The program achieves this by promoting regenerative agriculture techniques and providing better access to healthcare for coffee farmers. In addition, the program also supports conservation and protection of the National Park to ensure the long-term sustainability of coffee farming in the area.

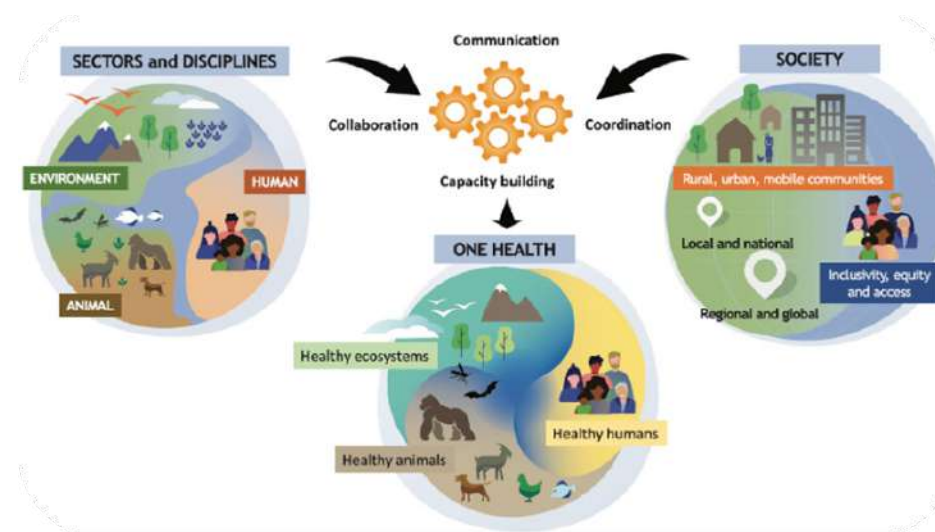
The K Argo-innovate Institute was established to solve the poverty and agricultural problems in Thailand's Nan province. It focuses on transitioning from carbohydrate-based crops to the cultivation of medicinal plants that have a higher economic value. The herbal supplies will be then transformed and produced based on pharmaceutical sciences, building an industrial community. The villagers sustainably increase their incomes by cultivating high-value plants instead of low-value ones. In addition, the project aims to promote biodiversity and improve soil health. This initiative can also help in the conservation of endangered plant species while creating economic opportunities for farmers.

3 One Health Concept

The One Health concept is based on the understanding that the health of humans, animals, and the environment are interconnected and interdependent. It recognizes that human health is influenced by factors such as the health of animals and the environment, and vice versa. Therefore, it advocates for collaboration and coordination between various experts, including health professionals and environmental practitioners to address health issues by considering the health of humans, animals, and the environment as a whole. Protecting biodiversity and the natural environment is critical for overall health and well-being (see Figure 9).

The One Health approach has been established for decades, and formalized collaboration on One Health between the tripartite, and later the quadrilateral, partnership has led to the development of the One Health Joint Plan of Action (2022 – 2026), launched in October 2022.

Figure 9:
One Health toward a sustainable healthy future as developed by the One Health High-Level Expert Panel (OHHLEP)



Source: Adisasmito WB, Almuhairei S, Behravesh CB, Bilivogui P, Bukachi SA, Casas N, et al. One Health: A new definition for a sustainable and healthy future. PLOS Pathog [Internet]. 2022 Jun 1 [cited 2023 Apr 11];18(6):e1010537. Available from: <https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1010537>

Since One Health involves collaboration between multiple disciplines, effective communication is essential to the success of One Health initiatives

to ensure that everyone involved is working towards a common goal. It also ensures that relevant information is shared among different disciplines and stakeholders, including data on disease outbreaks, environmental hazards, or other health-related issues that affect multiple species. The One Health Joint Plan of Action outlines a series of initiatives that strengthen collaboration, communication, capacity building, and coordination among all sectors and societies involved in addressing health issues at the interface of humans, animals, plants, and the environment.

Capacity building is also an important aspect of promoting a One Health approach.

It refers to the process of developing and strengthening the knowledge, skills, and abilities of individuals, organizations, and communities to effectively address health challenges. Improving the understanding of the linkages between health, climate change, and biodiversity can help to promote better decision-making and more effective solutions. This includes providing education and training to health professionals and other stakeholders, as well as improving public awareness of the importance of these interconnected issues. Capacity building strengthens health systems by building the capacity of healthcare workers thereby improving the availability and quality of healthcare services, and in turn the health of humans, animals, and the environment. Capacity building can also involve engaging communities to promote awareness and education about One Health issues. This can empower communities to take ownership of their health and well-being and support sustainable practices that promote One Health.

4 Innovative Financing Options

Innovative financing options have been explored to address the complex and urgent challenges of climate change and health, including green bonds, climate funds, social impact bonds, carbon pricing, and innovative financing mechanisms for health.

Climate funds, such as the Climate Investment Funds and Clean Cooking Fund, **are dedicated to financing projects that address climate change, including those related to health.** These funds provide financial support for adaptation and mitigation projects in developing countries. **Innovative financing mechanisms for health**, such as vaccine bonds, and social health insurance, can be leveraged to address the health impacts of climate change. These mechanisms **can help to ensure that vulnerable populations have access to healthcare and that healthcare systems are prepared for the impacts of climate change.**

Carbon pricing is a policy that puts a price on carbon emissions.

The goal is to create an economic incentive for individuals, companies, and governments to reduce their carbon emissions and transition to cleaner energy sources. While carbon pricing has primarily been seen as a tool to address climate change, it can also have positive impacts on public health. For example, by incentivizing the use of cleaner energy sources, carbon pricing can reduce air pollution, which is a major contributor to respiratory and cardiovascular diseases.

Collaboration among different stakeholders,
including the private sector,
is crucial to designing
effective solutions to climate change.

**It is important to take
a multi-sectoral approach domestically,**
such as promoting green cooking.

Role of Healthcare Professionals and Healthcare Systems

Healthcare systems account for over 4% of global CO₂ emissions; it accounts for around 10% of national emissions in most industrialized nations.

A few strategies that health systems can adopt to reduce Carbon emission. This includes: reduce direct power consumption, introduce renewables and energy efficiency, reduce indirect emissions through sustainable use of materials and circular economy [Some 40-50% of global CO₂ emissions are attributable to materials extraction, supply, and the manufacture of equipment; this is often referred to as “embedded carbon”]; engage the supply chain through incentivizing suppliers who take concrete measures on climate action and commit to science-based reduction targets; optimize care along care pathways in order to reduce the environmental impact of treatment such as use of telemedicine, investing in prevention, precision diagnosis, minimally invasive therapies and aftercare. Health Care Without Harm proposed a Global Road Map for Health Care Decarbonization.

Healthcare professionals and systems have an important role to play in addressing the impact of climate change.

One way is to invest in the development of the health workforce. This can be achieved by integrating ‘climate change and health’ in the curriculum of healthcare professionals and promoting the use of renewable energy and wastewater management. Transforming the education system by reinforcing a climate change mindset of health professionals is also important. In turn, healthcare professionals can then educate patients, colleagues, and the public about the health impacts of climate change, including the increased risk of heat-related illnesses, vector-borne diseases, and mental health disorders and encourage individuals and communities to take action to mitigate and adapt to the impacts of climate change.

Healthcare systems can also adopt mitigation strategies to reduce their carbon footprint and promote sustainable practices. This can include supporting clean energy policies including promoting climate smart healthcare systems by placing climate policy as a priority in facilities, management, and supply chains. In addition, bio-digestion can be used for the disposal of organic and pathological healthcare waste. Innovative solutions such as the Boston Medical Center Rooftop Farm can also be utilized in hospitals. Other solutions can include reducing energy use in hospitals, promoting sustainable transportation options for staff and patients, and reducing waste. Advocating for cross-sectoral engagement, particularly in climate change issues, can use health-focused arguments. Furthermore, the full engagement of the health sector in climate change negotiations and processes is vital for the success of climate action.

Case study: Chakri Naruebodindra Medical Institute (CNMI) is a hospital in Thailand that **has implemented a “go green” project** to reduce its environmental impact and promote sustainability.

The project aims to reduce energy consumption, decrease waste production, and promote the use of renewable energy sources. To achieve this, the hospital has implemented several initiatives, including:

Energy-efficient lighting

The hospital has replaced traditional light bulbs with LED lights, which are more energy-efficient and have a longer lifespan.

The hospital has installed solar panels on its roof to generate renewable energy and reduce its reliance on traditional energy sources.

Solar power

Waste reduction

The hospital has implemented a waste segregation system to separate recyclable and non-recyclable waste, and has also introduced a composting program to turn organic waste into fertilizer.

The hospital has implemented water-saving measures, such as low-flow toilets and faucets, to reduce water consumption.

Water conservation

Green transportation

The hospital encourages staff and visitors to use public transportation or alternative modes of transportation, such as bicycles or electric vehicles, to reduce carbon emissions from transportation.

By implementing these initiatives, the CNMI aims to reduce its environmental impact, save on energy costs, and promote sustainable practices. The project serves as an example of how hospitals and other organizations can take steps to reduce their environmental impact and promote sustainability (see Figure 10).

Figure 10:

The Chakri Naruebodindra Medical Institute (CNMI) "go green" project



Source: Drawn at the Conference by Major Thanasak Thumbuntu

Lastly, inclusion and empowering of citizens, particularly youth, women, indigenous and local communities, to participate in the development of climate solutions while provided with financing, tools, and innovations could be another potential solution. The role of citizens is crucial in responding to the challenges posed by climate change and promoting sustainable development. At the heart of it is the need to put people at the center of responses, giving them agency to act and become partners in the solution based on equitable and ethical practices. To effectively address climate change, marginalized groups, including youth, women, indigenous and local communities, need to be empowered by giving them a platform to share their insights and perspectives. These groups often have knowledge and experiences that can inform the development of effective solutions. Providing them with the necessary resources, such as financing, tools, and innovations, is key to enabling their full participation in the decision-making process. Doing so, can ensure their voices are heard and their unique perspectives are accounted for when developing climate solutions.

It is essential to involve youth in the policy and advocacy process to address climate change effectively.

As young people are likely to be most affected by climate change in the coming decades, they have a right to participate in shaping the policies and decisions that will affect their future. To achieve this, policy spaces need to be re-oriented to integrate young people as natural and equal partners. Funding should also be provided for grassroot and youth-led initiatives and integrating climate change into all forms of education, ensuring that future generations are equipped with the knowledge and skills to tackle this global challenge.

Communicating the impacts of climate change to the general public can be challenging.

To ensure that people are informed and can act to mitigate its impact, it is essential to simplify the message for the population. This involves using simple language that is easily understood and relatable examples. Collaborating with local journalists to communicate clear and concise information on climate change and its impact on the local community can be effective. In addition to communicating simplified messages, educating, and empowering local communities about climate change is also crucial. This includes providing information about the causes and impacts of climate change, as well as practical solutions that can be adopted at the community level. By doing so, individuals and communities can act towards a more sustainable future.

Providing the necessary tools
and resources to local communities
is crucial for empowering them
to act on climate change.

This can include training and capacity building for local leaders
and community members, as well as supporting the implementation
of policies and initiatives that can promote climate-friendly practices.



Simplifying the message for the public can help build awareness
and understanding around climate change. By informing, educating,
and empowering local communities,

they can act towards addressing
the challenges posed by climate change
and create a sustainable future for all.



HEALTHY MEETING

CONFERENCE POLICY



PMAC 2023 is strongly committed towards a healthy meeting,

continuing from last year's initiative in setting global and national norms and standards of a healthy and active meeting.

The conference provides an opportunity to all participants to choose healthier diets and engage in physical activity. Nutrition information and a warning label for food containing high sugar, sodium, and fat have been placed in every food corner.

Furthermore, PMAC 2023 is an alcohol-free conference. More physical activity space has been set up and welcomes all participants throughout the meeting. Standing tables for conference participants are made available in the plenary venue though not in the side meeting venue. Everywhere in the conference venue is free of smoking.

FIELD TRIP



PMAC 2023 FIELD TRIP

Our health is closely linked to the environment we live in. However, our climate is changing, with significant consequences for our health, well-being and safety.

Climate change is a change in the world's weather systems that occurs over decades. Most of the recent changes in our climate have been brought about by human activity. Without intervention, the changing climate will have far-reaching and catastrophic consequences for our state, the country, and the rest of the world. It is an urgent problem with implications at the global, national, community, and personal level.

What is Climate Change?

The United Nations gave a definition of climate change as a long-term shift in temperatures and weather patterns. It was driven by nature but since the 1800's it has been human activities that became the main driver of the changes.

Climate change has been discussed broadly at national and international level. It has significant consequence and is related to human health, well-being, and life safety. Without interventions, the changing climate will have far-reaching and catastrophic consequences for our state, the country, and the rest of the world. It is an essential and urgent issue with implications at the global, national, community, and personal level.

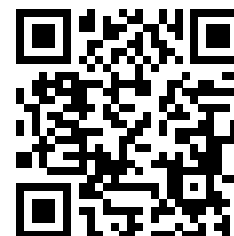
The field trip this year will show the experiences and the connections between climate change and human health, the opportunity gains and threats of exponential technological change, and evolving threats to global health and well-being posed by climate change.

SITE 1: Nan Sandbox Project - Forest Rehabilitation with Medicinal Plants

SITE 2: Chula Zero Waste Project

**SITE 3: CNMI Goes Green:
Chakri Naruebodindra Medical Institute
Saves Not Only Patients but Also the Planet**

FIELD TRIP



The Companion Book



Field Trip Video

SITE 1:



Nan Sandbox Project - Forest Rehabilitation with Medicinal Plants

Location: Nan Province
Date: 25 - 26 January 2023

The Nan Sandbox Project was launched with the ultimate goal of preserving and reforesting Nan's pristine headwater forest. The Nan River is the longest of the four rivers contributing to the Chao Phraya River, the vein of Thailand. This pristine headwater forest originates over 40 percent of the water in the Chao Phraya River. Thus, the impact of those floods and droughts in the past decade, faced by people in the region, could have been lessened with a well-preserved headwater forest. On this account, conservation and rehabilitation of Nan forest is of paramount importance to all of us. Recognizing this, a representative of Thailand's private sector, Kasikornthai Foundation, has been working to come up with a sustainable solution to tackle this problem.

Under the Nan Sandbox Project, a unique partnership between the Thai government, villagers, local leaders, and the private sector was formed to work together towards the shared ultimate goal. The project promotes such a long-term development plan which will sustainably build a community that humans and forest harmoniously cohabitate together, along with ensuring the standard of living of people in the Sandbox. In doing so, the project is working on the integration of "Plants to Medicines" knowledge to create a new end-to-end value chain with high enough value to be shared back to Nan villagers. With a sustainable income, Nan villagers will wholeheartedly turn into a major force of Nan pristine headwater forest's guardian.

SITE 2:



Chula Zero Waste Project

Location: Chulalongkorn University, Bangkok
Date: 26 January 2023

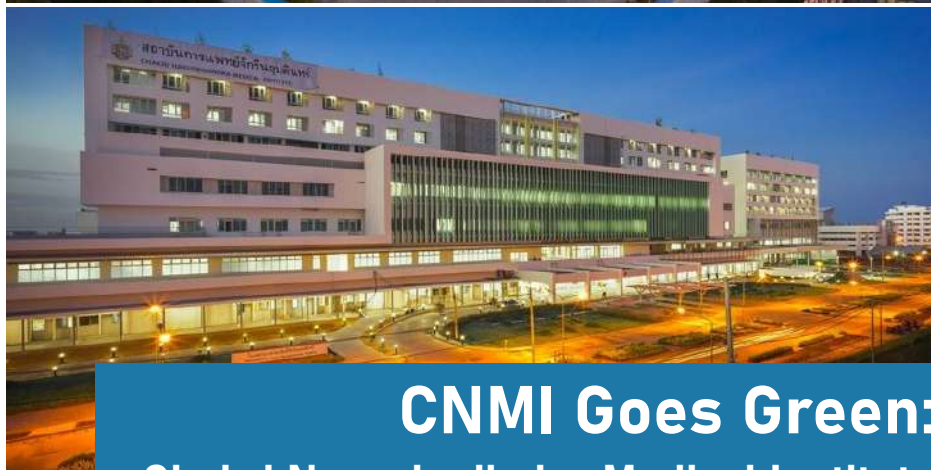
The Chula Zero Waste initiative, led by Chulalongkorn University's Environmental Research Institute and the Physical Resources Management Office, is a commitment of the University in being a sustainable university that focuses on tackling the environmental issues and cultivating eco-conscious lifestyles for all members of the university, especially the students.

The program employs a multi-sectoral approach to develop an effective waste management system within the campus and the surrounding communities for all types of waste, both hazardous and non-hazardous, generated in the academic activities, day-to-day operation, and recreation. Putting the Zero-Waste-to-Landfill concept and the 3R golden rules (Reduce-Reuse-Recycle) into action during the first 5-year phase (2017-2021) of the program, a reduction of approximately 40% of waste was resulted, exceeding its original target of 30%. More importantly, the program shows the effectiveness of organizational policy in driving the change of mindset and behavior of the stakeholders in the communities.

Implementation strategies and lessons learned from the Chula Zero Waste initiative will be shared and demonstrated, including the recent 'Partnership program for a more sustainable future'. This partnership model of university, community and private sector for waste segregation, collection and processing provides win-win benefits to the operators and the society, and also contributes to the reduction of environmental impact.

At present, similar activities are being carried out by more than 36 members of the Sustainable University Network of Thailand (SUN Thailand) which was founded in 2016 for learning exchange and policy development in alignment with the United Nations Sustainable Development Goals.

SITE 3:



CNMI Goes Green: Chakri Naruebodindra Medical Institute Saves Not Only Patients but Also the Planet

Location: Bang Phli district, Samut Prakarn Province
Date: 26 January 2023

Chakri Naruebodindra Medical Institute (CNMI) is a part of the Faculty of Medicine Ramathibodi Hospital. Established in 2017, the institute adopted the 4Es concept: Education Reform, Environmentally Friendly, Energy Saving, and Excellent Living and Learning Condition. CNMI is composed mainly of a hospital, a medical school, and a residential area that must cater to thousands of people a day and requires substantial amount of natural resources. To achieve a better and more sustainable operation, an action plan called 'CNMI goes Green' has been initiated.

CNMI goes Green comprises of 6 actions i.e., Increasing and improving green areas; energy saving and utilizing alternative energy sources; recycling wastewater; managing waste; promoting eco-friendly transportation; and empowering staffs and students. Having been initiated since 2019, a number of projects have given fruitful results. CNMI solar rooftop produces approximately 3 MWh electricity since its first month. Institution-wide energy saving and waste management campaigns have reduced approximately 464 tons CO2 equivalent in 2022. CNMI x Anywheel was proposed to increase bicycle use in the institute. More than 200 bicycles were provided for all staffs and students. The scheme is expected to augment zero-carbon internal transportation and also health promotion for all CNMI personnel. An upcoming project which will be launched in early 2023 is recycling wastewater by filtration and ozonation to use in cooling towers. The project is expected to be a novel prototype for water resource conservation.

Apart from these strategic projects, many policies, e.g., single-use plastic prohibition and energy saving are also applied to create a sense of responsibility. Moreover, activities from the CNMI personnel are collaterally encouraged. Aiming to cultivate the green perspectives, campaigns such as You sort-We serve (plastic sorting) or World Environment Day exhibition are willingly supported by the executives.

This site visit will present the accomplishment of CNMI to operate in an environmentally safe and sustainable way. Green projects will be demonstrated. The participants will also gain an understanding of the importance of green policy as well as the importance of collaboration from personnel to promote a green environment.



FIELD TRIP

PMAC 2023

WORLD ART CONTEST



PMAC 2023 WORLD ART CONTEST

Since 2013, a unique activity called the “Art Contest” was introduced to the Prince Mahidol Award Conference (PMAC) which not only crossed over two different sides of knowledge, art and science, but also brought the public audience, the community, closer to the PMAC concept.

The Art Contest project was initiated as an instrument to communicate the idea of the conference theme to the public audience. The contest was opened to everyone, with the aim of raising the awareness of the young generation in how their health is connected to their little families and through the entire World. Vice versa, the various new perspectives of a successful world where all people live better, happy, healthy and equitably from the young generation have been presented to our prestigious participants.

This year, the Prince Mahidol Award Conference invited students and all people to take part in the PMAC 2023 World Art Contest under the topic “How the Environment Affects our Health?” through Drawings & Paintings. The key topics for the artists to create their artwork under the critical deterioration of the global ecosystem has inevitably put health and well-being of all the living beings in a dangerous position. We, humankind, are now confronting the global challenges and threats to our own race, planetary health and the ecosystems. We depend on immediate, collaborative, sustainable and profound action and practical solutions for a greener future for coming generations.

The project has received positive response nationally and internationally from young people, parents and schools. Out of 13 nationalities that participated, 236 entries were sent in, 16 young artists won the prizes (16 prizes worth over 136,000 Baht).

The Winners were invited to receive the award during PMAC 2023 on 26 January 2023 at the Centara Grand, CentralWorld. The award ceremony event was a fulfilling and enjoyable experience for the winners and participants.

All the winning artwork were displayed during the conference. The display art pieces amazed most PMAC participants by their high quality artistic skill and creativity. We recognized the difficulties of many schools which support our program as well. Consequently, we introduced the “art contribution”. The purpose was to provide financial contribution from our prestigious PMAC participants to schools which supported the art program for their students. The art contribution of winning art pieces from PMAC 2023 has raised over 60,000 Baht and we will look for opportunities to increase the funds for art contributions to be given to the schools in PMAC 2024.

The artwork are displayed on the PMAC 2023 website



Drawings & Paintings



Under 9 Years Old

World First Prize

Pacharaporn KHUENNKAM



World Second Prize

Nathapohn SENTHONG

World Third Prize

Yuttawee RINTARUK

World Honorable Mention Prize

Meekhun LUEPRASITSAKUL

Wachirawit BOONSAWAT

Phinsiri SITTHIKA

Suprawee TENGTRISORN

Konchawan KANYAYA

Panyarat MAHACHAI



9 – 13 Years Old

World First Prize

Maria Felicity TEJADA



World Second Prize

Poonyisa SODSAI

World Third Prize

Kanyaphon KAENTHAO

Punyisa TONGON

World Honorable Mention Prize

Aimmika BOONSAWAT

Kritsanapon JULJANGREED

Papitchaya NATTHIP

Lintang Citra SAGITA, Lathisa Nadine AZZAHRA

Walin CHAISUK, Thayakon MATTAYOM,

Suthida SOPHAP

Kittitee AENDSAO



14 – 18 Years Old

World First Prize

Maria Angelica TEJADA



World Second Prize

Benjawan JINDARAT

Arachaporn JONGSUK

World Third Prize

Nattasack MANGTUP

Manascha KLINHOM, Ganyawee JITPRAWAT,

Kulnatda PUSODSEE

World Honorable Mention Prize

Nannapad CHAICHANABUNYONG

Paraya THANYAWONG

Natthida HADDAWY

Jidapa THONGMAG, Siriwimon INTHARAHA,

Natthanicha CHAROENPHOT

Thanawat JOEMWATTHANA

Natchayathorn TRUNGTAWATCHAI



Above 18 Years Old

World First Prize

Nawapon MADSUDEN



World Second Prize

Armando TOMENIO

Chutchai CHUASAIDOUNG



World Third Prize

Trinsaya TEPSUWAN

Sukit CHUASAIDOUNG

World Honorable Mention Prize

Barbara BLASCO

Subah AMIN

Wittiwat SANSAWAT, Kittithorn Donngun,

Adirek SAIWAN

Sudarat NORATAT

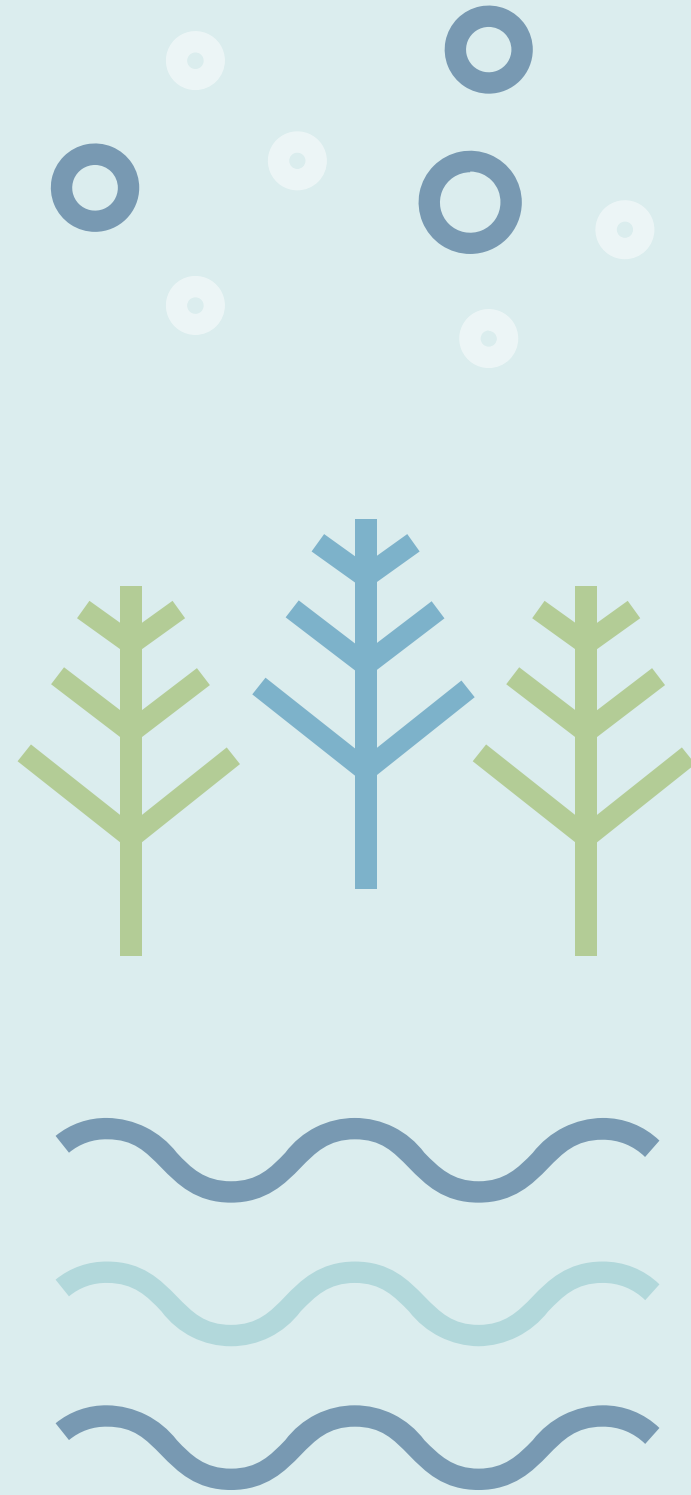
Narisara JUNTAMOON

Jesus Ramos TEJADA



The Award Ceremony of the PMAC 2023 World Art Contest

OTHER
**CONFERENCE
ACTIVITIES**



PODCASTS

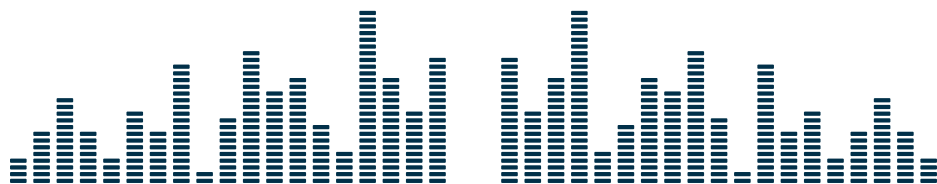
The World We Want: Youth Voices on Climate and Health

Listen to what global youth leaders really think about the handling of our intensifying Climate and Health Emergency.

Jonathan Foster gets the unrestricted views of a diverse and inspiring group of global activists who talk openly about how various crises are framed, current leadership, economic and social values, human stories from their regions, the way climate affects health, their expectations for COP26 and their hopes for the future.

This podcast is brought to you by the Prince Mahidol Award Conference in collaboration with the Swedish Institute for Global Health Transformation (SIGHT), FHI360, the World Health Organization (WHO), The World Bank, The British Medical Journal (The BMJ), the United States Agency for International Development (USAID), and Foster Media.

First established in 1998, the Prince Mahidol Award Conference has grown to be one of the most important fora to discuss public health issues of global significance and the largest to be led by a low- or middle-income country. It is hosted by the Prince Mahidol Award Foundation, the Royal Thai Government, UN agencies and international health and development partners. The conference participants include ministers, intergovernmental organizations, researchers, and civil society organizations worldwide.



Listen Ep.01 - Ep.06



Apple Podcast



SoundCloud

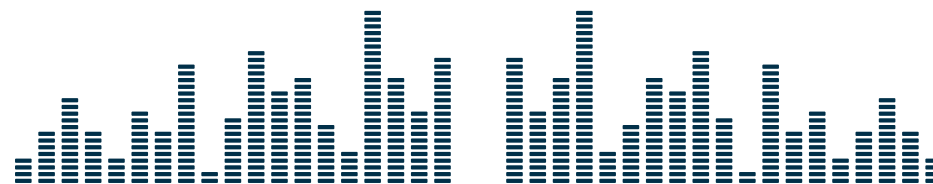
Listen Ep.07 - Ep.10



Apple Podcast



SoundCloud



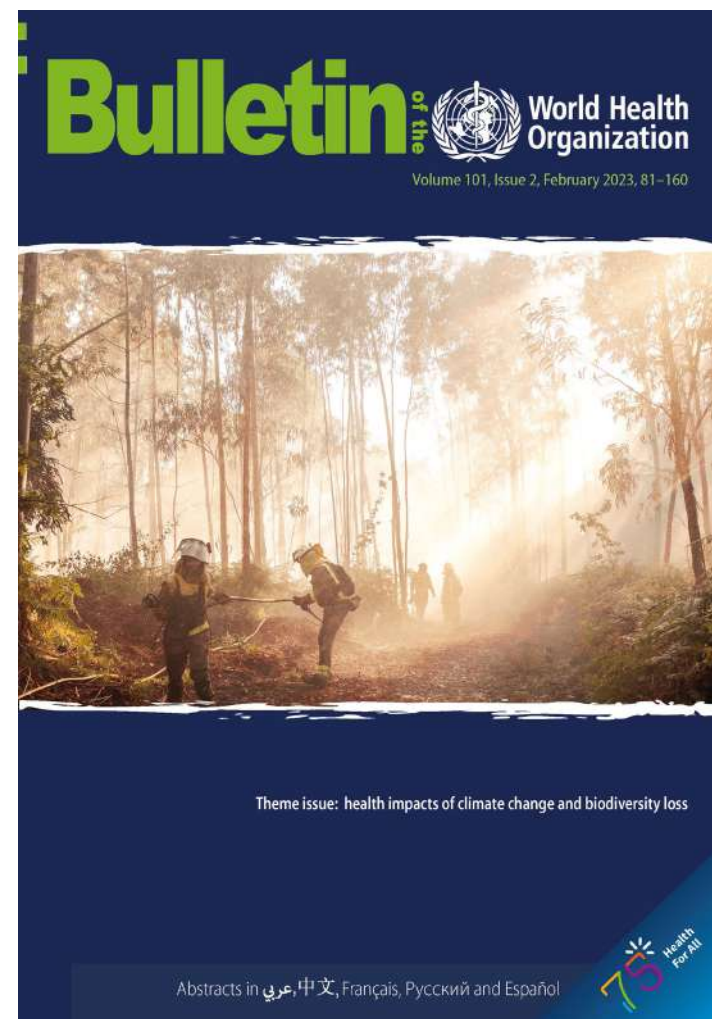
PUBLICATIONS

Bulletin of the World Health Organization for the Prince Mahidol Award Conference 2023

Theme Issues:

Health Impacts of Climate Change and Biodiversity Loss
Volume 101, Issue 2, February 2023, 81-160 (12 articles)

The Bulletin of the World Health Organization is an international journal of public health with a special focus on developing countries. Since it was first published in 1948, the Bulletin has become one of the world's leading public health journals. This month's theme is linked to the Prince Mahidol Award Conference on the intersection of health with climate change, environment and biodiversity.



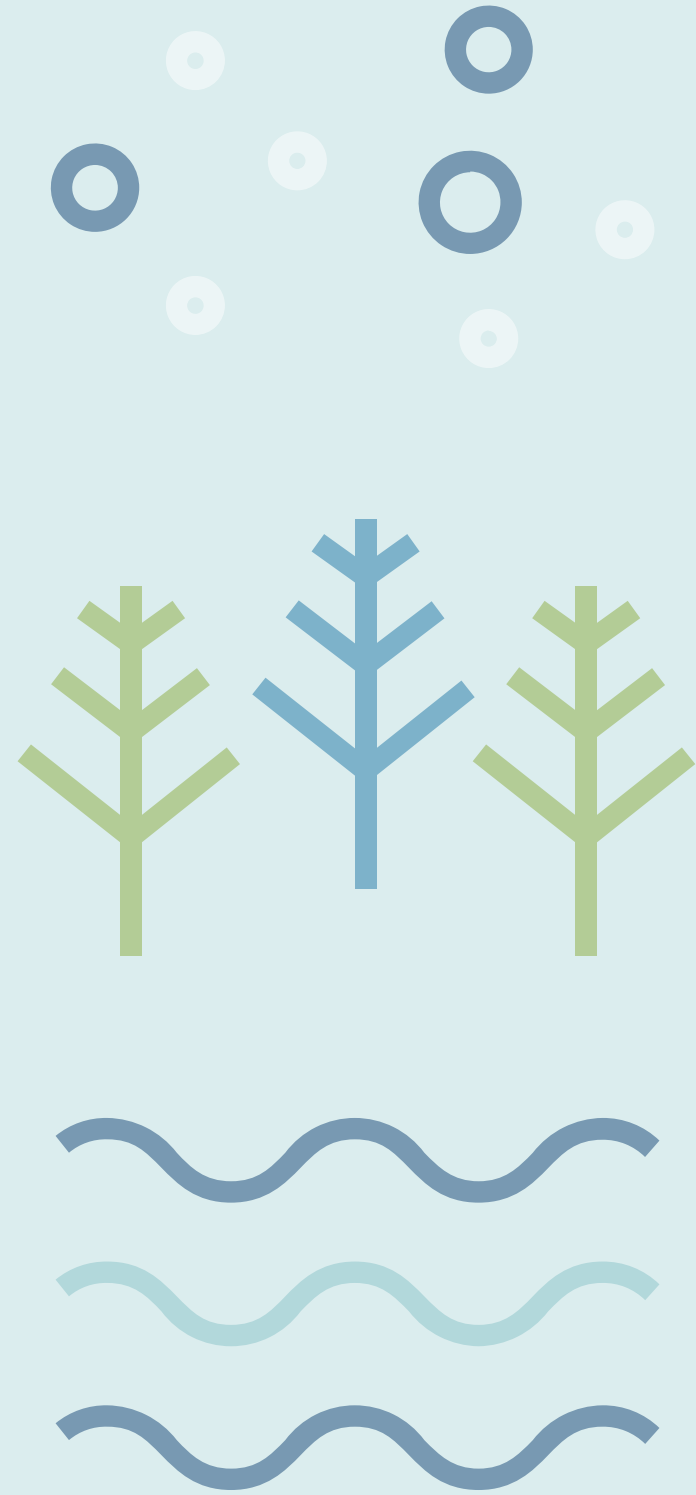
Read full articles



Page	Title	Author
82	Political commitments needed to address health impacts of the climate crisis and biodiversity loss	Viroj Tangcharoensathien, Diarmid Campbell-Lendrum, Peter Friberg & Angkana Lekagul
83	Accountability for carbon emissions and health equity	Sarah Whitmee, Blanca Anton & Andy Haines
90-101	Concurrence of water and food insecurities, 25 low- and middle-income countries	Sera L Young, Hilary J Bethancourt, Edward A Frongillo, Sara Viviani & Carlo Cafiero
102-110	Death registration coverage 2019-2021, India	Nandita Saikia, Krishna Kumar & Bhaswati Das
111-120	Modelling COVID-19 vaccination status and adherence to public health and social measures, Eastern Mediterranean Region and Algeria	Zlatko Nikoloski, Robert Bain, Manal K Elzalabany, Peggy Hanna, Tara Rose Aynsley, Dalia Samhoury, Leonardo Menchini, Neha Kapil & Amaya Gillespie
121-129	Urban agrobiodiversity, health and city climate adaptation plans	Mary C Sheehan
130-139	Health and economic benefits of meeting WHO air quality guidelines, Western Pacific Region	Nicole Egerstrom, David Rojas-Rueda, Marco Martuzzi, Bin Jalaludin, Mark Nieuwenhuijsen, Rina So, Youn-Hee Lim, Steffen Loft, Zorana Jovanovic Andersen & Thomas Cole-Hunter
140-148	Riverine food environments and food security: a case study of the Mekong River, Cambodia	Swetha Manohar, Shauna Downs, Sabina Shaikh, Sithirith Mak, Serey Sok, Elizabeth Graham, Lais Miachon & Jessica Fanzo
149-151	Considering vulnerable communities in climate mitigation and adaption plans, India	Adithya Pradyumna, Sheetal Patil & Madhuri Ramesh

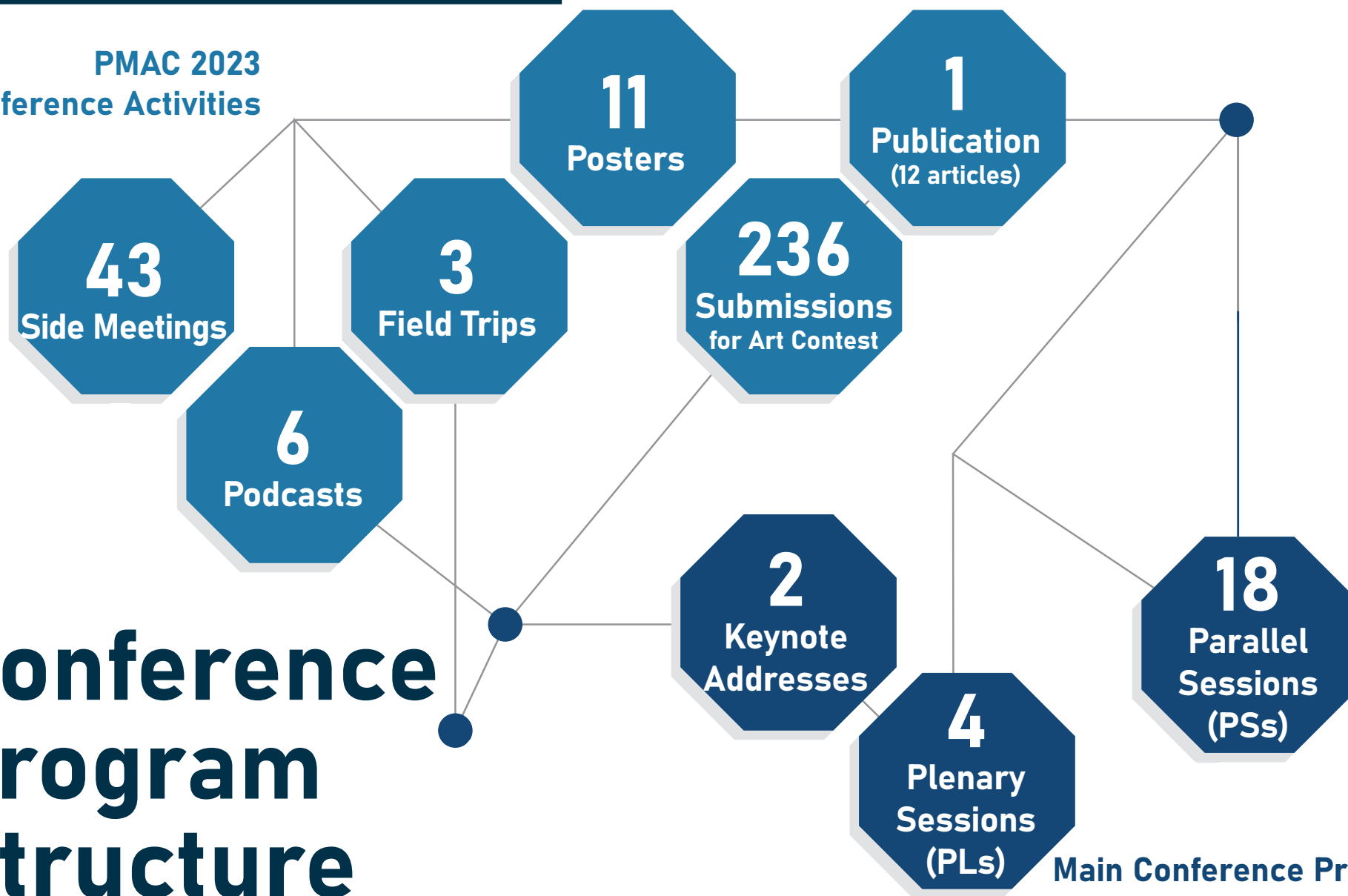
Page	Title	Author
152-154	Impacts of tropical cyclones on food security, health and biodiversity	Andrea Monica D Ortiz, Paul L C Chua, Dante Salvador Jr, Cecilie Dyngeland, Jose Dante G Albao Jr & Rene A Abesamis
155-157	Success, failure, and the imperative for justice in climate negotiations	Laurie Laybourn-Langton
158-160	Advocating for health and climate	Jen Iris Allan

ANNEXES



Annex I

PMAC 2023 Conference Activities

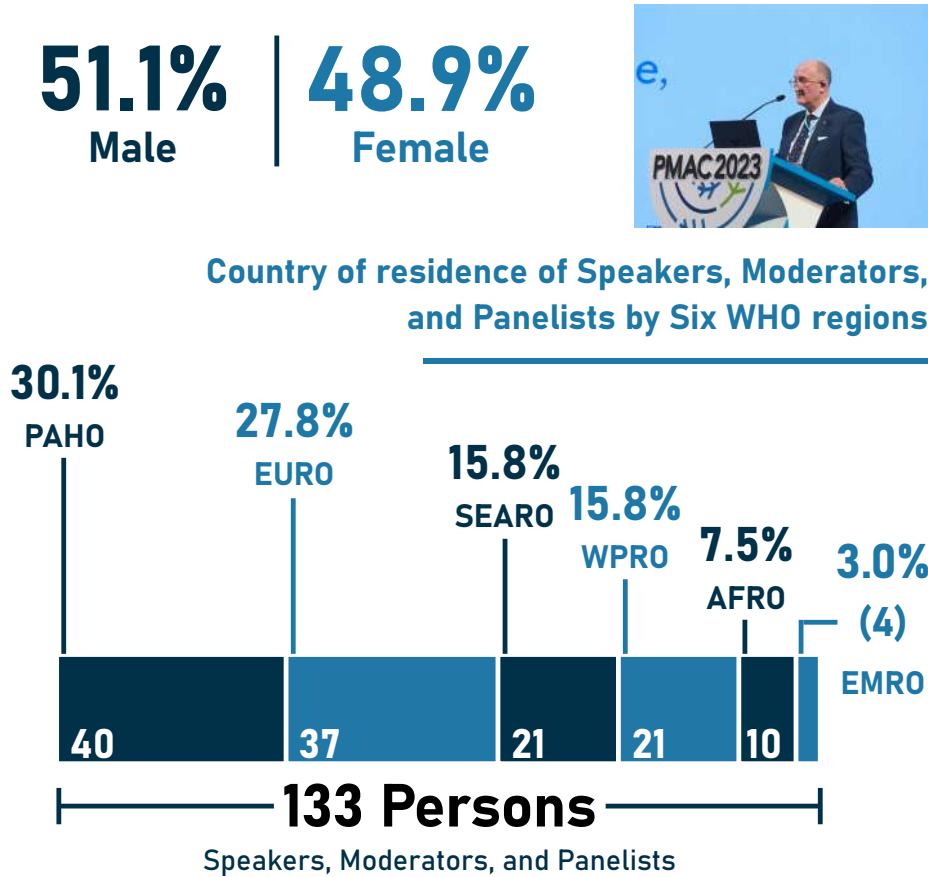


Conference Program Structure

Main Conference Program:
24 – 29 January 2023

Speakers, Moderators, and Panelists

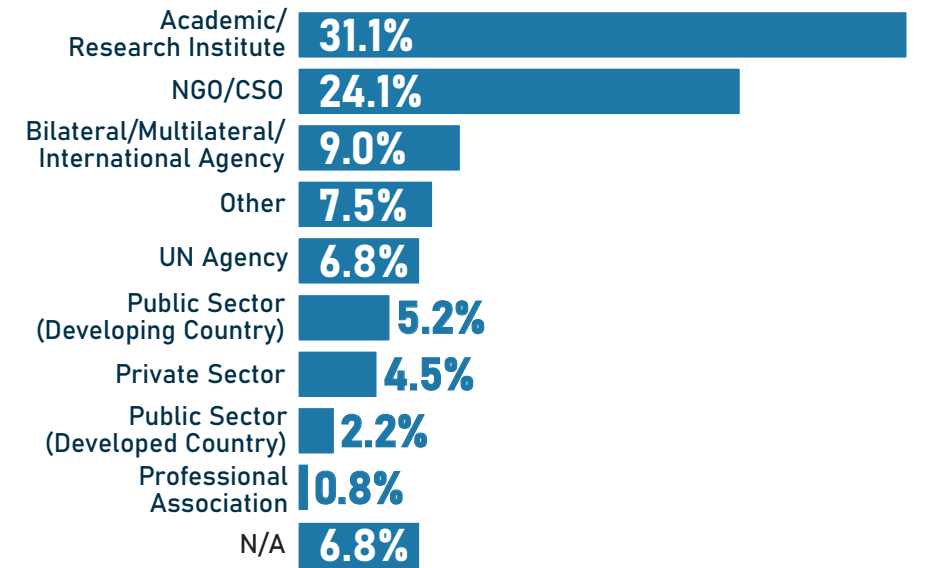
Speakers, moderators, and panelists: There were a total 133 speakers, moderators, and panelists altogether (male 51.1%, female 48.9%) from 40 countries in all sessions of PMAC 2023 (including keynote, opening, 4 plenary, 18 parallel and closing sessions). There were 89 speakers attending on-site and 44 speakers attending online.



Note: America (PAHO); Europe (EURO); South-East Asia (SEARO); Western Pacific (WPRO); Africa (AFRO); Eastern Mediterranean (EMRO)



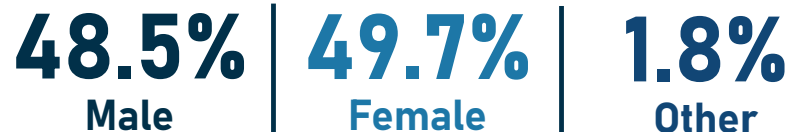
Organization of Speakers, Moderators, and Panelists



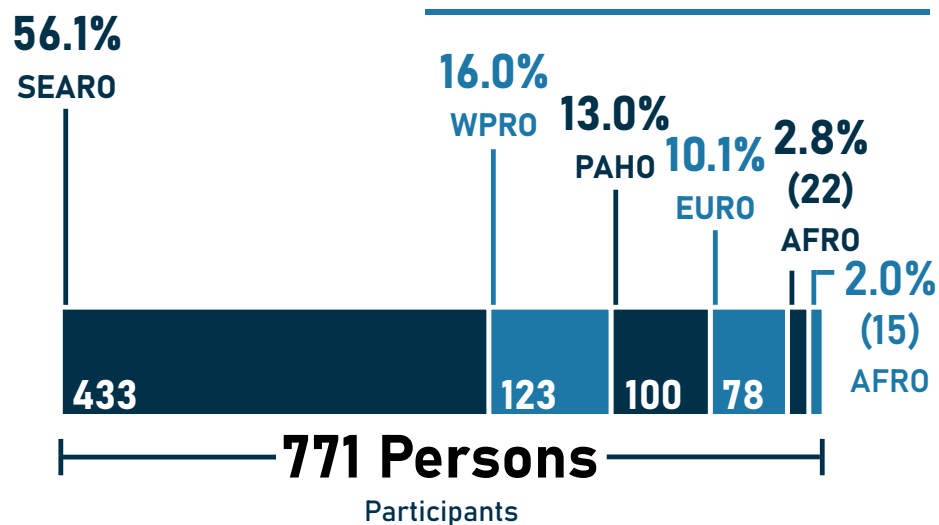
A full list of the PMAC 2023 Conference Speakers, Panelists, Chairs, Moderators, and Rapporteurs is shown in ANNEX III

PARTICIPANTS

Total registered participants (including speakers, panelists, moderators, rapporteurs, and attendees): There were a total of 771 participants from 60 countries (male 36.3%, female 47.6%, others 16.1%)



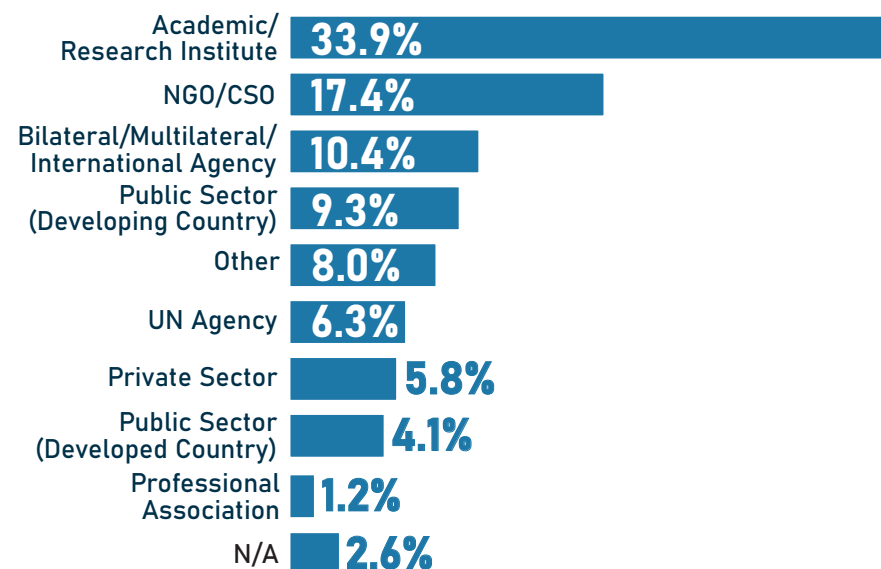
Country of residence of Participants
by Six WHO regions



Note: America (PAHO); Europe (EURO); South-East Asia (SEARO); Western Pacific (WPRO); Africa (AFRO); Eastern Mediterranean (EMRO)



Organization of Participants



ANNEX II

LIST OF INTERNATIONAL ORGANIZING COMMITTEE MEMBERS

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. Vicharn Panich	Chair, International Award Committee	Prince Mahidol Award Foundation, Thailand	Chair
Ms. Catherine Russell	Executive Director	United Nations Children's Fund, USA	Co-Chair
Ms. Winnie Byanyima	Executive Director	Joint United Nations Programme on HIV/AIDS, Switzerland	Co-Chair
Dr. Naoko Yamamoto	Assistant Director -General for Universal Health Coverage and Health Systems Cluster	World Health Organization, Switzerland	Co-Chair
Dr. Juan Pablo Uribe	Global Director for Health Nutrition and Population	The World Bank, USA	Co-Chair
Mr. Haoliang Xu	Assistant Secretary General and Director of the Bureau for Policy and Programme	United Nations Development Programme, USA	Co-Chair
Dr. Marijke Wijnroks	Head, Strategy, Investment and Impact Division (SIID) a.i.	The Global Fund to Fight AIDS, Tuberculosis and Malaria, Switzerland	Co-Chair

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. Osuke Komazawa	Senior Director, Human Development Department	Japan International Cooperation Agency, Japan	Co-Chair
Dr. Atul Gawande	Assistant Administrator for Global Health	United States Agency for International Development, USA	Co-Chair
Dr. Barbara J. Stoll	President	China Medical Board, USA	Co-Chair
Dr. Naveen Rao	Senior Vice President & Senior Advisor to the President, Health Initiative	The Rockefeller Foundation, USA	Co-Chair
Dr. David Harper	Senior Consulting Fellow, Global Health Programme	Chatham House, United Kingdom	Co-Chair
Dr. Fran Baum	Co-Chair Global Steering Council	People's Health Movement, Australia	Co-Chair
Dr. Rintaro Mori	Regional Adviser (Population Ageing and Sustainable Development)	United Nations Population Fund, Thailand	Member
Dr. Peter Friberg	Co-founder and Director	Swedish Institute for Global Health Transformation, Sweden	Member
Dr. Shannon Larsen	Senior Program Officer Development Policy and Finance	Bill & Melinda Gates Foundation, USA	Member
Dr. Teo Yik Ying	Dean, Saw Swee Hock School of Public Health	National University of Singapore, Singapore	Member

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. Ashley McKimm	Director of Partnership Development	The British Medical Journal, United Kingdom	Member
Dr. Timothy Mastro	Chief Science Officer	FHI360, USA	Member
Mr. Mohamed Eissa	Liaison Officer for Public Health Issues	International Federation of Medical Students Associations (IFMSA), Egypt	Member
Dr. Dennis Carroll	Chair, Leadership Board	Global Virome Project, USA	Member
Dr. Jesse Bump	Executive Director of the Takemi Program in International Health and Lecturer on Global Health Policy	Harvard T.H. Chan School of Public Health, USA	Member
Dr. Udom Kachintorn	Advisor to The Dean	Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand	Member
Mr. Thani Thongphakdi	Permanent Secretary	Ministry of Foreign Affairs, Thailand	Member
Dr. Kiattibhoom Vongrachit	Permanent Secretary	Ministry of Public Health, Thailand	Member
Mr. Danucha Pichayanan	Secretary General	National Economic and Social Development Council, Thailand	Member
Dr. Supat Vanichakarn	Secretary General	Prince Mahidol Award Foundation, Thailand	Member
Dr. Jadej Tham-matach-aree	Secretary General	National Health Security Office, Thailand	Member

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. Nopporn Cheanklin	Director	Health Systems Research Institute, Thailand	Member
Dr. Supreda Adulyanon	Chief Executive Officer	Thai Health Promotion Foundation, Thailand	Member
Dr. Banchong Mahaisavariya	President	Mahidol University, Thailand	Member
Dr. Prasit Watanapa	Dean, Faculty of Medicine Siriraj Hospital	Mahidol University, Thailand	Member
Dr. Chanchai Sittipunt	Dean, Faculty of Medicine	Chulalongkorn University, Thailand	Member
Dr. Piyamitr Sritara	Dean, Faculty of Medicine Ramathibodi Hospital	Mahidol University, Thailand	Member
Dr. Suwit Wibulpolprasert	Vice Chair	International Health Policy Program Foundation and Health Intervention and Technology Assessment Foundation, Thailand	Member
Dr. Viroj Tangcharoensathien	Senior Advisor	International Health Policy Program, Thailand	Member
Dr. Walaiporn Patcharanarumol	Director, Global Health Division	Ministry of Public Health, Thailand	Member & Joint Secretary
Mr. Gerardo Zamora-Monge	Executive Officer, Office of Assistant Director-General, Division of UHC/Healthier Populations	World Health Organization, Switzerland	Member & Joint Secretary

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. Toomas Palu	Advisor in Global Health	The World Bank, Switzerland	Member & Joint Secretary
Dr. Mandeep Dhaliwal	Director, HIV, Health and Development	United Nations Development Programme, Thailand	Member & Joint Secretary
Ms. Debora Comini	Deputy Regional Director, East Asia and the Pacific Regional Office	United Nations Children's Fund, Thailand	Member & Joint Secretary
Mr. Taoufik Bakkali	Regional Director a.i., Regional Support Team Asia and the Pacific	Joint United Nations Programme on HIV/AIDS, Thailand	Member & Joint Secretary
Dr. Scott Stewart	Senior Health Economist, Bureau for Global Health	United States Agency for International Development, USA	Member & Joint Secretary
Ms. Shoko Isokawa	Director, Human Development Department	Japan International Cooperation Agency, Japan	Member & Joint Secretary
Dr. Phuong Nhan Le	CMB SE Asia Regional Representative	China Medical Board, Thailand	Member & Joint Secretary
Dr. Charlanne Burke	Director, Integrated Operations, Health Initiative	The Rockefeller Foundation, USA	Member & Joint Secretary
Ms. Bridget Lloyd	Steering Committee	People's Health Movement, South Africa	Member & Joint Secretary
Dr. Thananya Boonyasirinant	Deputy Dean for Academic Affairs	Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand	Member & Joint Secretary

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. Churnrurtai Kanchanachitra	Professor	Institute for Population and Social Research, Mahidol University, Thailand	Member & Joint Secretary
Dr. Rapeepong Suphanchaimat	Director	International Health Policy Program, Thailand	Member & Joint Secretary

LIST OF INDEPENDENT INTERNATIONAL SCIENTIFIC COMMITTEE MEMBERS

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. Viroj Tangcharoensathien	Senior Advisor	International Health Policy Program, Thailand	Chair
Dr. Angkana Lekakul	Researcher	International Health Policy Program, Thailand	Member
Dr. Ashley McKimm	Director of Partnership Development	The British Medical Journal, United Kingdom	Member
Dr. Borwornsom Leerapan	Associate Professor	Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand	Member
Ms. Brigita Molnarova	Research Coordinator	Swedish Institute for Global Health Transformation, Sweden	Member
Ms. Cristina Romanelli	Programme Officer, Biodiversity Climate Change and Health	World Health Organization, Switzerland	Member
Dr. Churnrurtai Kanchanachitra	Emeritus Professor	Institute for Population and Social Research, Mahidol University, Thailand	Member

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. David Harper	Senior Consulting Fellow, Global Health Programme	Chatham House, United Kingdom	Member
Dr. Dennis Carroll	Chair, Leadership Board and Senior Advisor	Global Virome Project and Global Health Security, URC, USA	Member
Dr. Diarmid Campbell-Lendrum	Head, Climate Change and Health, Department of Environment, Climate Change and Health (ECH)	World Health Organization, Switzerland	Member
Dr. Fran Baum	Co-Chair Global Steering Council	People's Health Movement, Australia	Member
Dr. Hani Serag	Health System Research Fellow and Adjunct Assistant Professor, Department of Pediatrics	Center to Eliminate Health Disparities and University Texas Medical Branch, USA	Member
Mr. John Spangler	Director, Communications, Policy, and Advocacy	The Rockefeller Foundation, USA	Member
Mrs. Milin Sakornsin Ruddit	Senior International Relations Officer	Thai Health Promotion Foundation, Thailand	Member
Ms. Olga Bornemisza	Senior Technical Advisor, Health Systems Strengthening	The Global Fund to Fight AIDS, Tuberculosis and Malaria, Switzerland	Member
Dr. Osuke Komazawa	Senior Director, Human Development Department	Japan International Cooperation Agency, Japan	Member

NAME – SURNAME	POSITION	ORGANIZATION	ROLE
Dr. Peter Friberg	Co-founder and Director	Swedish Institute for Global Health Transformation, Sweden	Member
Dr. Rapeepong Suphanchaimat	Director	International Health Policy Program, Thailand	Member
Dr. Rintaro Mori	Regional Adviser (Population Ageing and Sustainable Development)	United Nations Population Fund, Thailand	Member
Dr. Sulakshana Nandi	National Joint Convener, PHM India and Co-Chair, Global Steering Council	People's Health Movement, India	Member
Dr. Thu Ba Huynh	Senior Advisor, Environment and Climate Change	FHI360, USA	Member
Dr. Timothy Mastro	Chief Science Officer	FHI360, USA	Member
Dr. Varalak Srinonprasert	Assistant Dean, Research	Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand	Member
Dr. Walaiporn Patcharanarumol	Director, Global Health Division	Ministry of Public Health, Thailand	Member
Dr. Wanrudee Isaranuwatthai	Senior Researcher	Health Intervention and Technology Assessment Program (HITAP), Thailand	Member





WELCOME DINNER

ANNEX III

LIST OF SPEAKERS, PANELISTS, MODERATORS, AND RAPPORTEURS

Speaker/Panelist	Moderator	Rapporteur
KEYNOTE SESSION		
The Prince Mahidol Award Armchair Conversation with Pioneers in Fields of Diabetes and HPV Vaccine		
Douglas R. Lowy John T. Schiller Ralph A. DeFronzo	Pavit Pienvichit	
KEYNOTE ADDRESSES		
Banthoon Lamsam Vandana Shiva		
PLENARY SESSION 0		
Setting a New Health Agenda – at the Nexus of Climate Change, Environment, and Biodiversity		
Andri Snaer Magnason Banthoon Lamsam Omnia El Omrani Vivian Camacho	Richard Horton	Chaovanon Sophonsakulsuk Dian Faradiba Wit Wichaidit
WELCOME DINNER SESSION		
Andri Snaer Magnason David Nabarro Jemilah Mahmood Rhannon Osborne Rita Issa Soukeyna Sylla	Timothy Evans	

Speaker/Panelist	Moderator	Rapporteur
PLENARY SESSION 1		
Living within Limits – A Remedy for Climate Change, Biodiversity Loss, Pollution, and Health?		
Abigail Johnson Alexandre Antonelli Anne Larigauderie David Daly Jemilah Mahmood Johan Rockström	Sharon Friel	Ajaree Rayanakorn Nikita Mandyam Rin Indarodom Waraporn Suwanwela
PARALLEL SESSION 1.1		
Climate Injustice: Ethics, Distributions, Fairness, and Justice		
Anand Bhopal Bhushan Tuladhar Maureen Penjueli Soukeyna Sylla	Sulakshana Nandi	Nontakorn Siri Wattanasatorn Sarayuth Khuntha Teppei Kondo
PARALLEL SESSION 1.2		
Climate Change Communication		
Jagadish Thaker Kathie Treen Niheer Dasandi Tan Su Lin	Maria Nilsson	Khanitta Saeiew Nujpanit Narkpitaks Supitsara Kositbovornchai
PARALLEL SESSION 1.3		
Transformation of Fossil Fuels and Health (Energy and Health)		
Alejandro Ren Daly Rivero Andrew Haines Josep M. Anto Marina Romanello Natalia Linos Yanadet Sripanich	Renzo R. Guinto	Haruka Furukawa Nutwara Kijthammarat Ponlagrit Kamwichar Siriya Sirithienthong
PARALLEL SESSION 1.4		
Elevating the Voices of Young People for Climate Action		
Lavetanalagi Seru Mohamed Eissa Omnia El Omrani Shreesha Nankhwa Tipvipa Kittikasemsak Wilawan Panyoung	Nathaniel Diong	Chanya Mittrakulkij Collins Santhanasamy Payao Phonsuk

Speaker/Panelist	Moderator	Rapporteur
PARALLEL SESSION 1.5 Climate Inaction: Power, Politics, and Political Economy		
Angele Mendy Benita Kayembe Ian Dunlop Julieta Kavetuna Minah Kang	Jesse Bump	Praewa Kulatnam Salisa Rittimanomai Phatthanamon Sinsawat Nurul Hussain
PARALLEL SESSION 1.6 Metric and Measurement		
Alejandro Ren Daly Rivero Dasho Karma Ura Marina Romanello Stein Emil Vollset Stephen Dorey	Diarmid Campbell-Lendrum Tamer Samah Rabie	Anond Kulthanmanusorn Chayannan Jaide Nontakorn Siriwattanasatorn
PLENARY SESSION 2 Overcoming Challenges and Harnessing Opportunities for Health at the Biodiversity-Climate Nexus		
David Nabarro Kobie Brand Lavetanalagi Seru Maria Neira Vandana Shiva	Dennis Carroll	Hui Xiang Chia Khanin Hosiriphon Pispasinee Pisansin Rungsun Munkong
PARALLEL SESSION 2.1 Food System Transformation: Challenges (Part 1)		
Abigail Johnson Danny Hunter Jessica Fanzo Vanida Khumnirdetch	Francesco Branca	Inthira Suya Krittika Tiwari Yanisa Pumsutas
PARALLEL SESSION 2.2 Inter-sectoral, Multi-sectoral Approaches: Challenges (Part 1)		
Amanda Quintana Doreen Robinson John Amuasi Nicole Redvers Puthita Kachintorn Vipat Kuruchittham	Ronald Labonté	Capucine Barcellona Eakdanai Samanuhut Sirinard Nipaphorn

Speaker/Panelist	Moderator	Rapporteur
PARALLEL SESSION 2.3 Integrating Health into Nature-based Solutions		
Ali Rizvi Elizabeth Pleuss Jonathan Jennings Loreta Rufo Pipit Aneaknithi Rayan Kassem	Cristina Romanelli	Kanchanok Sirison Khanit Pisawong Shaheda Viriyathorn Taksaporn Laipasu
PARALLEL SESSION 2.4 Food System Transformation: Opportunities (Part 2)		
Marcos Ezequiel Filardi Maureen Miruka Sharon Friel Sylvia Karpagam Vandana Shiva	David Nabarro	Mayumi Okada Natnicha Manaboriboon Watinee Kunpeuk
PARALLEL SESSION 2.5 Inter-sectoral, Multi-sectoral Approaches: Opportunities (Part 2)		
Boripat Siriaronrat Catherine Machalaba Chadia Wannous Sean Hillier Thi Huong Le	Cristina Romanelli	Mathudara Phaiyaron Thiphaphon Chanthama Wanapas Wachiradejkul
PARALLEL SESSION 2.6 Mobilizing Financial Resources for Climate and Health		
Ashlinn Quinn Harish Hande Loreta Rufo Mai Farid Maria Neira Priya Basu Toomas Palu	Tamer Samah Rabie	Kanang Kantamaturapoj Natnarun Prutthiarphakul Sontanuek Chotchoung-chatchai
PLENARY SESSION 3 Making a Difference: Taking Action on the Ground		
Andrea Meza Murillo Anjali Kaur Keizo Takemi Omnia El Omrani Vanida Khumnirdetch	Agnes Binagwaho	Dimple Butani Nattadhanai Rajatananvin Nuttara Sapphaso Sopana Hiranaburna

Speaker/Panelist	Moderator	Rapporteur
PARALLEL SESSION 3.1		
Political and Social Movements		
David Boyd Diarmid Campbell-Lendrum Mary Bassett Maureen Penjueli Rita Issa Roman Vega Vivian Camacho	Hampus Holmer	Boonyasit Ngamvirojcharoen Hinano Tateishi Thanasak Thumbuntu
PARALLEL SESSION 3.2		
Transforming the Economy for Health Equity and Environmental Sustainability		
Jayati Ghosh Ravi Duggal Ritu Sadana Ronald Labonté Sandrine Dixon-Declève Toomus Palu	Bridget Lloyd Hani Serag	Ajaree Rayanakorn Bhumipat Dejcharnchaiyuth Shaheda Viriyathorn
PARALLEL SESSION 3.3		
Multi-sectorial Policies and Practices: Mitigation		
Douglas Webb Girma Gemechu Keisuke Nansai Lisha Yang Modi Mwatsama Ramon San Pascual Wijarn Simachaya	Erica Key	Ryan Sitanggang Suravee Assavachai Yan Lin Aung
PARALLEL SESSION 3.4		
Social Movements: Their Role in Advocating to Reduce the Negative Health Effects of Climate Change		
Alexis Benos Bridget Lloyd Erika Arteaga-Cruz Madhuresh Kumar Maria Kolesnikova Mbali Baduza Paul Laris	Fran Baum	Mathudara Phaiyarom Maylin Wongjarupun Rujira Adhibai

Speaker/Panelist	Moderator	Rapporteur
PARALLEL SESSION 3.5		
How Do We Reduce the Impact of Healthcare on the Environment?		
Ariel Pablos-Mendez David Maffeo Nuttapun Supaka Renzo R. Guinto Ruth Stringer Sam Hu Shweta Narayan	Ashley McKimm	Anjalee Uthpala De Silva Polkotuwe Gedara Ravikarn Boonyapradub Siriyaporn Kanhachon Supakrit Kositbovornchai
PARALLEL SESSION 3.6		
Multi-sectorial Policies and Practices: Adaptation		
Douglas Webb Giulia Loffreda Kristine Belesova Manjit Kaur Sohal Montira Pongsiri Rudolf Abugnaba-abanga Sally Edwards Sean Leung	Gabriel M. Leung	Somtaneuk Chotchoung-chatchai Thanyaporn Teeraputorn Wan Chantavilasvong
CLOSING SESSION		
Benita Kayembe Chee Yoke Ling Fran Baum Naveen Rao Rajiv Shah	Peter Friberg	
SYNTHESIS: SUMMARY, CONCLUSION AND RECOMMENDATIONS		
by Lead Rapporteur		
Viroj Tangcharoensathien Abigail Johnson Diarmid Campbell-Lendrum Loreta Rufo		
Rapporteur Coordinator		
Walaiporn Patcharanarumol (Advisor) Angkana Lekagul Titiporn Tuangratananon Warisa Panichkriangkrai		

ANNEX IV

LIST OF SIDE MEETINGS AND SPECIAL EVENT

LIST OF SIDE MEETINGS

TITLE	ORGANIZATION
Addressing Ecosystem Change and Pandemic Emergence Through Strengthening One Health Implementation	School of Global Health (SGH), Faculty of Medicine, Chulalongkorn University, Thailand; Thai Red Cross Emerging Infectious Diseases Clinical Center, Chulalongkorn Hospital, Thailand One Health Coordination Unit Thailand, Department of Diseases Control, Thailand; Pasteur International Center for Research on Emerging Infectious Diseases, Institut Pasteur, France; Emerging Infectious Diseases – South East Asia Research Collaboration Hub (EID-SEARCH), EcoHealth Alliance, USA; Emerging Infectious Diseases and Health Security, Infectious Diseases Department, Global Health Population and Nutrition, FHI360, USA; Association for the Development of Environmental Quality (Thailand), Thailand
Challenges and Opportunities for Strengthening Biodiversity, Climate Resilience and Environmental Determinants in One Health to Build Robust Health (Eco)Systems and Societies: The Implementation of The One Health Quadripartite Joint Plan of Action	World Health Organization (WHO); Food and Agriculture Organization (FAO); Organization for Animal Health (WOAH); United Nations Environment Programme (UNEP)

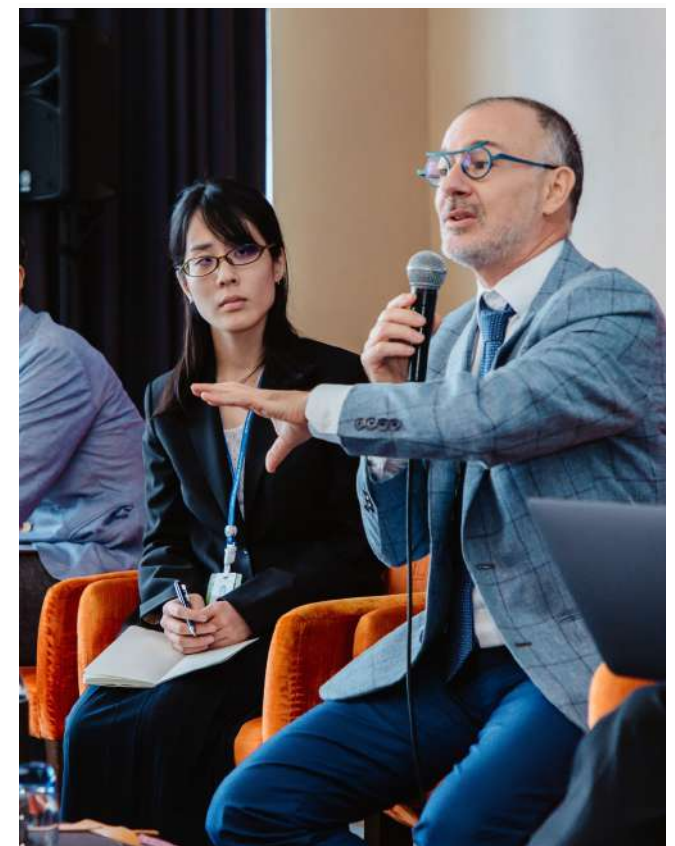
TITLE	ORGANIZATION
Towards a “Greener Future Scenario”: Pollution and Health – Perspectives from Frontline Workers Tackling Plastic Pollution	FHI360 and SecondMuse, in collaboration with GIZ
Advancing the Struggle for Equity, Ecological Justice and Health for All	People’s Health Movement
Scale-up the Health Professional Development to Protect Health from Climate Change.	The Partnership Project for Global Health and Universal Health Coverage Phase 2 (GLO+UHC2)
Prince Mahidol Award Youth Program (PMAYP) Conference 2023	Prince Mahidol Award Youth Program
Health Financing and lessons learnt for Climate Change Financing (Global Action Plan Partners)	The Global Fund; World Bank; World Health Organisation; Global Financing Facility, Gavi; GAP Secretariat; Agence Française de Développement (AFD); USAID; Other potential bilateral partners; Bill and Melinda Gates Foundation (BMGF); Asian Development Bank Islamic Development Bank
Learning Health Systems to Face the Confluence of Crises	ACCESS Health International; Global Learning Collaborative for Health Systems Resilience
Revisiting Human Security Concept and Practice in Global Health	Japan International Cooperation Agency (JICA); Research Center for Sustainable Development, the University of Tokyo; Indian Ocean World Studies, the University of Tokyo; UNFPA; Institute for Global Health Policy Research (iGHP), National Center for Global Health and Medicine (NCGM), Japan
Advances in Neurodegenerative Diseases: PMAYP Mentor Lecture Session	Prince Mahidol Award Youth Program; Thai Neuroscience Society (TNS)

TITLE	ORGANIZATION
Experience of Sri Lanka in Triple Planetary Crisis and Way Forward Through the Economic Crisis	Ministry of Health – Sri Lanka; Ministry of Environment – Sri Lanka
Building Economies for Health for All	Ritu Sadana, WHO Mariana Mazzucato, IIPP
Overcoming Challenges and Harnessing Opportunities for Health at the Nexus of Biodiversity and Climate Change: Global Lessons from Cross Sectoral Population-Environment-Development (PED) Approaches.	BUILD Project, African Institute for Development Policy (AFIDEP); USAID Office of Population and Reproductive Health (PRH)
International Trade and Health Conference 2023 [Theme – International trade and health: A need for a paradigm shift]	National Commission on International Trade and Health Studies (NCITHS); International Health Policy Program (IHPP); WHO/SEARO; CCS-EnLIGHT
National Experiences in Health Policy and Systems Research for the Climate Crisis	Alliance for Health Policy and Systems Research (AHPSR); World Health Organization; World Health Organization
Sustainable Development Goals Game: Explore the World, Yourself, and Collaboration	SDSN Thailand; CCS-ENLIGHT: International Health Policy Program (IHPP); SDG Move; TIIS; Center for Peace and Conflict Studies; Chulalongkorn University
Towards a Science and Practice of Systems Thinking to Improve Health in The Context of Climate Change, Conflict and COVID-19	Dr. Aku Kwamie, Alliance for Health Policy and Systems Research/WHO; Prof. Goran Tomson, Karolinska Institutet
Dataquest: Advancing Knowledge and Action at the Environment/Climate and Health Nexus	FHI360 and USAID Regional Development Mission for Asia
Locally Led Solutions for Climate Change, Environment, Biodiversity, and Global Health	Ariella Camera, USAID; Elizabeth Lugten, USAID

TITLE	ORGANIZATION
Safe and Healthy Journeys to School – Supporting People, Planet, and Prosperity	UNICEF
Action on Climate Crisis, Ecological Sustainability and Food-Nutrition Security for Health For All: Lessons from People's Health Movements	People's Health Movement
Prince Mahidol Award IAC-SAC Brainstorming	Prince Mahidol Award Foundation under the Royal Patronage
Jordan: the Nexus of Climate Change, Environment and Health Emergencies	USAID/Jordan
Intensifying Interdisciplinary and Intersectoral Initiatives in Global and Planetary Health: Why and How?	Swedish Institute for Global Health Transformation (SIGHT) Fellows; Planetary and Global Health Program; St. Luke's Medical Center College of Medicine, Philippines
Healthy Eating and Nutrient Profiling in Asia	Ajinomoto Co., INC; Institute of Nutrition Mahidol University; Nature Research Custom Media
Japan Nutrition for Human and Planetary Health beyond Climate change	RESULTS JAPAN; Ajinomoto Co., INC; Japan Dietetic Association (JDA)
Past, Present and Future of Endovascular Thrombectomy for Acute Ischemic Stroke: PMAYP Mentor Lecture Session	Prince Mahidol Award Youth Program
Climate Change and Its Adverse Impact on Health Financing (Focus on Pakistan)	Jahanzaib Sohail (World Bank); Breshna Orya (The Global Fund)
Updates on Liver Cancer Screening and Surveillance: PMAYP Mentor Lecture Session	Prince Mahidol Award Youth Program

TITLE	ORGANIZATION
Suicide Prevention and Social Media: PMAYP Mentor Lecture Session	Prince Mahidol Award Youth Program
Innovative Data Platforms and Tools for Monitoring Environmental and Health Threats: Lessons from Low- and Middle-Income Countries	The Rockefeller Foundation
The Lancet Countdown on health and climate change	SIGHT and Lancet Countdown
Is there a need for a Global 'Safeguard' Convention on Laboratories Handling High-Consequence Pathogens?	WHO; Chatham House; USAID
Collaborative Actions Towards Thailand Net Zero Driven by University Network	International Health Policy Program; Office of National Higher Education Science Research and Innovation Policy Council (NXPO)
SDGs, UHC and Window of Opportunity: Lessons from Indonesia's Health Transformation Agenda	Somil Nagpal; Zelalem Debebe; Pandu Harimurti; The World Bank
Greening the Health Sector: Progress to Date and Next Steps	Elizabeth Pleuss
Myths and reality of UHC	International Health Policy Program, Thailand (IHPP); Global Health Division, Ministry of Public Health, Thailand; National Health Security Office; Health Intervention and Technology Assessment Program (HITAP); Ministry of Foreign Affairs, Thailand; CCS-Enhancing Leadership in Global Health – Thailand (CCS-EnLIGHT)

TITLE	ORGANIZATION
PMAC TALK: Modelling at The Nexus of Crises	Health Intervention and Technology Assessment Program (HITAP) Ministry of Public Health, Thailand; London School of Hygiene and Tropical Medicine (LSHTM); National University of Singapore (NUS)



SIDE MEETINGS

LIST OF SPECIAL EVENTS

HPSR-AMR Website and Thailand One Health Dashboard on Antimicrobial Resistance Launch

Meeting Organizer
International Health Policy Program

Meet with the Author of the Book of 'On Time and Water: A History of Our Future' - Andri Snær Magnason

Meeting Organizer
Andri Snær Magnason & PMAC Secretariat

Health for All Film Festival 2022 - Special Screening

Meeting Organizer
MED and WHO

The Launch of the Bulletin of the World Health Organization for PMAC 2023: "Impact of Climate Change on Biodiversity, Agriculture, and Health"

Meeting Organizer
IHPP and WHO



In Remembrance of Thai UCS Founder "Dr. Sanguan Nitayarumphong" - UHC Book Series Launch Event

Meeting Organizer
National Health Security Office (NHSO)

Launch of Global Health Watch 6: In the Shadow of the Pandemic

Meeting Organizer
People's Health Movement

Launch of The BMJ Strategy and Vision to Improve Health and Resiliency in the Asia Pacific: How Can a Medical Journal Help Tackle Planetary Challenges of Climate, Conflict, Inequities, and Beyond

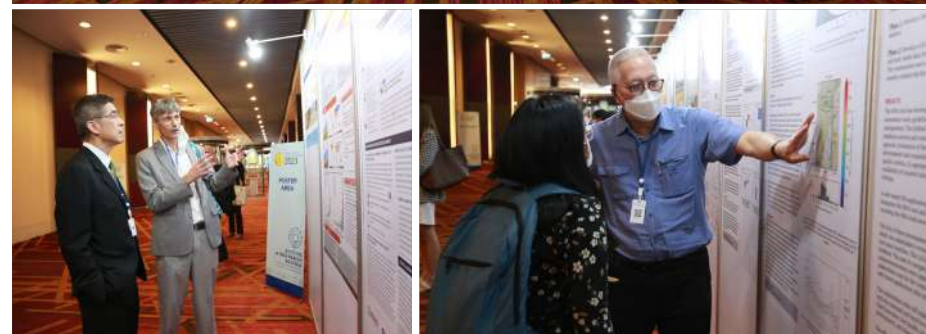
Meeting Organizer
British Medical Journal

ANNEX V

LIST OF POSTER PRESENTATION

ID	POSTER TITLE	AUTHOR
A055	Addressing health impact of climate change and loss of biodiversity, and co-creating adaptation strategies in Bangladesh	Ashish Kc
A062	Assessing the non-renewable material and energy resources needed to advance resilient social health protection systems	Claude Meyer
A069	Finding Solutions to Air Pollution through a Socio-Economic Lens: Project Implementation Insights from the Kathmandu Valley, Nepal	Shreesha Nankhwa
A072	Pathways to drive adoption of renewable energy and energy efficiency for small healthcare units in India	Sivaramakrishnan Balasubramanian
A076	Solarizing medical oxygen systems in India: Greening up to save lives	Jayendra Kasar
A078	Quantifications of Greenhouse Gases Emissions from Healthcare Facilities: Case studies of Health Promoting Hospitals in Thailand	Suthirat Kittipongvises
A091	Early lessons and experiences in building climate-resilient local health systems in coastal municipalities in the Philippines	Katrina Abigail Ceballos
A095	Is Climate Connected with Communicable Diseases?: Assessing and Projecting Climate-Related Infectious Diseases in an Urban Setting in the Philippines	Krizelle Cleo Fowler
A096	Determining Provincial Health Risk to Climate and Disasters in the Philippines	Anne Kathlyn Baladad

ID	POSTER TITLE	AUTHOR
A097	The Price of Service: Assessing the health risks from PM2.5 exposure of public utility jeepney drivers in Metro Manila, Philippines	John Wong
A098	Developing a Geographic Information System to Address Post-Disaster Basic and Health Needs in Temporary Housing Facilities	Stephanie Anne Co







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Environment, and Biodiversity



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