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Planetary Health: Reflections from Asia

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Planetary Health is a concept that advocates the care of the planet for human own survivability. It underscores the health implications of environmental degradation brought about by human activities and development progress, and calls for a systemic approach that considers and addresses socio-environmental trade-offs of certain policy and/or economic objectives. In view of multiple crises that have been happening in recent years - from the COVID-19 pandemic to the war in Ukraine - which have further negatively affected the environment, understanding how Planetary Health can be applied to address continuing environmental decline is critical. Planetary Health is a relatively new term in Asia. Drawing from the discussions in the 6th NTS-Asia Consortium Annual Conference in April 2022, this NTS Insight maps the different ways Indonesia, India, Bangladesh, Japan, and China engage Planetary Health in their specific contexts. The interpretations of the concept are likely to influence the trajectory of its implementation.

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Introduction

The state of the world today from the global COVID-19 pandemic to the war in Ukraine illustrates the impacts that developments in one part of the world can have in another with an overall effect on the way we live on our planet together. Planetary Health has emerged as a concept out of the public health field to navigate a pathway to progress so that humans can not only survive but thrive in a healthy environment. The 6th NTS-Asia Consortium Annual Conference held in Singapore in April 2022 brought the Consortium members from Indonesia, India, Bangladesh, Japan, and China to share their perspectives on Planetary Health and how the concept is understood and interpreted in Asia. This NTS Insight aims to situate their understandings of Planetary Health within the concept's main premises. It preliminary maps the different emphases given on the concept, which suggests potential variations in its implementations.

Planetary Health has at its core a conviction that the health of the planet is a pre-condition to the health and survivability of mankind. We have not adequately accounted for future environmental and health impacts of present-day gains, and the disproportionate effect of these impacts on the poor and the vulnerable.[1] The issue is essentially about a paradox of human beings becoming the victim of their own success.[2] Human development, that includes technological advances, has contributed to better health and living conditions in the last few centuries. Yet ironically, human survivability is at stake as a result of accompanying ecological destruction. Developmental activities for economic growth are the primary reason behind the current ecological crisis.[3]

By framing it that way, Planetary Health as a concept fundamentally asks the following question: 'what needs to change to address drivers of environmental degradation so we can continue living and prosper healthily?'

Planetary Health is unlike sustainable development that aims to address the broad issues of human development, or low-carbon development that targets carbon emission reduction. It is very specific in its grounding on human health and survivability/prosperity. However, like sustainable development and low-carbon development, Planetary Health also aims at creating systemic transformations based on environmental arguments. How then is the concept of Planetary Health contributing differently to the care of the environment? The challenge in the narratives of climate change lies primarily in the contested nature of the causes of climate change and the timeframe of its impacts. Such disagreements render consensus on climate action an uphill battle. In this regard, Planetary Health creates a stronger narrative by linking the state of the environment directly to a person's own life.

Its value therefore lies in personalising the reasons why environmental health must not be compromised. Making Planetary Health a personal concern to all people can potentially be more effective in bringing about a mindset change which subsequently generates stronger collective action for the environment through better policy synergy and more environment-conscious community initiatives.

Policy synergy is particularly important given that Planetary Health employs systems thinking that shifts our mindset from linear to circular to illustrate the interconnectedness of global challenges. It encourages the thinking of trade-offs beyond immediate commercial, societal, and national borders and ways to address them. It targets multiple

[1] Sarah Whitmee et al. 2015. "Safeguarding Human Health in the Anthropocene Epoch: Report of The Rockefeller Foundation–Lancet Commission on Planetary Health", *The Lancet* 386(10007): 1973-2028, https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)60901-1/fulltext .
[2] Nicole de Paula. *Breaking the Silos for Planetary Health: A Roadmap for a Resilient Post-Pandemic World*, (Singapore: Palgrave MacMillan, 2021).
[3] Sarah Whitmee et al. 2015. "Safeguarding Human Health in the Anthropocene Epoch: Report of The Rockefeller Foundation–Lancet Commission on Planetary Health", *The Lancet* 386(10007): 1973-2028, https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)60901-1/fulltext .

sectors in pursuit of various objectives, such as preventing the next pandemic, solving climate change, improving urban living, attaining sustainable food systems, and championing fairer economies[4] that will eventually be beneficial for all human health.

In practical terms, Planetary Health reconsiders the formulation and implementation of existing environmental policy instruments. These include bans or mandates, regulations to set a fixed limit for pollution, taxes such as fuel taxes, landfill taxes, and waste taxes, incentives such as payments for ecosystem services, biodiversity offsetting, and renewable energy technology development, cap and trade on pollution limit, fair trade and ecolabeling, and environmental certification, ranking or health performance, and related campaigns.

At present, many of these do not contribute positively at the aggregate level because there are other initiatives, related or unrelated to these environmental policies, that are taking place in parallel and causing detrimental effects on the environment.[5] Breaking the silos of the pursuits of different objectives[6] is a key determinant to the health of the planet.

Given Planetary Health's pivot on human health, this NTS Insight first gives a brief overview of the health implications of the Anthropocene – the time when human activity has had most impact on our planet. It then discusses the various interpretations and possible applications of Planetary Health in the Asian context as put forward by the NTS-Asia Consortium members.

Health Implications of Environmental Degradation

Despite knowing that fresh air and unpolluted water are positively correlated with good global health, balancing between what we do and what is good for the environment is not as straightforward. Human activities, particularly in the Anthropocene, are exacting too much pressure on the environment. Worsening environmental conditions are increasingly manifested in the triple planetary crisis of pollution, biodiversity loss, and climate change.[7] The following sub-sections describe how different human activities are affecting the environment.

- **Energy Use**

  Energy use is an area where human activities, environmental health and human health are evidently interrelated. The use of energy sources is needed to support human's day-to-day activities. Because of its indispensable utility, energy use has direct impacts on the health of the planet and of humans particularly through the emissions of pollution and greenhouse gases. The continuing use of biomass such as woods for cooking and heating by billions of people in poor countries causes hazardous air pollutants such as Particulate Matter (PM) 2.5, PM10, carbon monoxide (CO), nitrogen dioxide (NO2), among others, to be released at the point of use.[8]

  The cost of household air pollution on human life stands at a staggering 3.8 million deaths per year.[9] The solution is therefore in substituting biomass with cleaner energy sources such as biofuels, liquefied petroleum gas,

[4] "Preventing the Next Pandemic," Sunway Centre for Planetary Health, accessed June 16, 2022, https://university.sunway.edu.my/research/planetaryhealth/preventing-the-next-pandemic

[5] Andrea S. Downing, Grace Y. Wong, Michelle Dyer, Ana Paula Aguiar, Odirilwe Selomane, Amanda Jiménez Aceituno. 2021. "When the Whole is Less than the Sum of All Parts – Tracking Global-level Impacts of National Sustainability Initiatives," *Global Environmental Change* 69(102306).

[6] Nicole de Paula. 2021. "Breaking the Silos for Planetary Health: A Roadmap for a Resilient Post-Pandemic World," Singapore: Palgrave MacMillan.

[7] "The Triple Planetary Crisis: Forging a New Relationship between People and the Earth," UN Environment Programme, last modified July 14, 2020, https://www.unep.org/news-and-stories/speech/triple-planetary-crisis-forging-new-relationship-between-people-and-earth

[8] Ajay Pillarisetti and Kirk R. Smith, "Energy and Planetary Health," in *Planetary Health: Protecting Nature to Protect Ourselves*, eds. Samuel Myers and Howard Frumkin (Washington, Covelo: Island Press, 2020), 285-323.

[9] "Household Air Pollution and Health," World Health Organization, last modified September 22, 2021. https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health.

electricity, and piped natural gas, which emit less pollutants inside homes.[10] The access to these cleaner energy sources remains a challenge with 2.4 billion people without clean cooking sources in 2020.[11] Through Planetary Health linking the care of the planet to our everyday activities as well as national and international efforts, this concept supports and recognises community efforts like clean cooking campaigns at the household level as a necessary component, while at the same time considering the socio-environmental impacts of increased use of biofuels, gas and electricity and finding ways to minimise these trade-offs.

Similarly, the use of fossil fuels, which made up of about 80 percent of total primary energy supply and 65 percent of global electricity generation in 2019,[12] drives air pollution outdoors through the release of hazardous particulates. Substances released from the burning of coal have led to the deaths of about 366,000 people in China in 2013[13] and close to 167,000 people in India in 2015.[14] In Southeast Asia, coal-related air pollution will result in 69,600 deaths per year by 2030.[15]

Considering the pivotal roles that energy plays in everyday lives, the Planetary Health concept encourages the adoption of energy sources that emit less hazardous particulates and greenhouse gases to provide a win-win solution for the environment and for human health. Planetary Health does not stop at that, however. This concept investigates the trade-offs of choosing and using such energy sources, including in places beyond national borders, and find solutions to minimise them. By so doing, the overall impact will be positive for the planet and subsequently for human health.

- **Expansion of Urban Areas**

Urban spaces are another area of interest for Planetary Health. Rapid urbanisation is happening in many parts of the world, including in developing countries where infrastructure and city designs are not always adequate to accommodate expanding city areas and the population within. This phenomenon affects the environment in many ways. First, it encroaches natural habitats and causes biodiversity loss. Forests and wildlife need to give way for expanding urban settlements. The loss of vegetation subsequently contributes to climate change.[16]

In addition, given the high concentration of population and economic activities like industrial processes, energy generation and transportation, pollution levels in urban spaces are especially high. Large populations likewise cause stress on limited water resources and generate a high volume of waste. Planetary Health finds solutions to protect groundwater resources near industrial sites especially those that are currently or may be used for future domestic, municipal and agricultural consumption. It encourages identifying the means to safeguard ground and surface water quality, reduce emissions of health-damaging air pollutants, ensure adequate waste management and sufficient green spaces. Planetary Health makes these a primary consideration and maintains their prioritisation even though other imperatives such as economic gains, and population size and lifestyle, continue to put pressure on environmental agenda.

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[10] Richenda Van Leeuwen, Alex Evans and Besnik Hyseni. "Increasing the Use of Liquefied Petroleum Gas in Cooking in Developing Countries," *Live Wire, Worldbank Group*, 2017. https://openknowledge.worldbank.org/bitstream/handle/10986/26569/114846-BRI-PUBLIC-add-series-VC-LWLJfinOKR.pdf?sequence=5

[11] IEA, IRENA, UNSD, World Bank, WHO, *Tracking SDG 7: The Energy Progress Report* (Washington, DC: World Bank, 2022). https://trackingsdg7.esmap.org/data/files/download-documents/sdg7-report2022-full_report.pdf

[12] "World Energy Balances: Overview," International Energy Agency, last modified August, 2021, https://www.iea.org/reports/world-energy-balances-overview/world .

[13] GBD MAPS Working Group, "Burden of Disease Attributable to Coal-Burning and Other Major Sources of Air Pollution in China." Special Report 20. (Boston, MA: Health Effects Institute, 2016). https://www.healtheffects.org/publication/burden-disease-attributable-coal-burning-and-other-air-pollution-sources-china#:~:text=The%20analyses%20show%20that%20coal,as%20major%20contributors%20as%20well.

[14] GBD MAPS Working Group, "Burden of Disease Attributable to Major Air Pollution Sources in India. Special Report 21" (Boston, MA: Health Effects Institute, 2018, https://www.healtheffects.org/system/files/GBD-MAPS-SpecRep21-India-revised_0.pdf

[15] Shannon N. Koplitz, Daniel J. Jacob, Melissa P. Sulprizio, Lauri Myllyvirta, and Colleen Reid. 2017. "Burden of Disease from Rising Coal-Fired Power Plant Emissions in Southeast Asia," *Environmental Science & Technology*, 51(3): 1467-1476.

[16] Karen C. Seto, Burak Güneralp, and Lucy R. Hutyra. 2012. "Global Forecasts of Urban Expansion to 2030 and Direct Impacts on Biodiversity and Carbon Pools," *Proceedings of the National Academy of Sciences*, 109(40): 16083-16088 https://www.pnas.org/doi/10.1073/pnas.1211658109

Buildings present problems for the environment too. Buildings in-use are significant contributors to climate change[17] and their construction and demolition produce solid waste. Planetary Health promotes well-designed cities and healthy urban living that capitalise on places, health and environment. It also calls for considering ways of how to do so without causing socio-environmental damage in areas and countries that provide the materials needed to create such cities.

- **Economic Growth Model**

  Planetary Health is a drive to not only survive but thrive in the world today. The current economic growth model and our modern lifestyles over the last two hundred years are the reason why the planet is getting sicker now. Planetary health prompts a search for ways to modify the current economic model to fit the planetary limits better while ensuring communities can prosper. This includes finding methods to interpret, measure, and value all aspects of Planetary Health, designing the institutions, governance frameworks and policy measures geared towards Planetary Health, and refining or transforming existing business models and developing entirely new business models to deliver Planetary Health.

  Business value chains typically comprise material extraction and processing, manufacturing, distribution and sale, use, and disposal or recycling or reuse, which are critical in impacting the health of the planet. Planetary Health envisions value chains that are mindful of and sensitive to their impacts on the environment and human health. It prompts businesses and policymakers to identify, measure, and value the positive contributions and negative externalities along the value chain, and utilise various means, including technological advancement such as big data and artificial intelligence, to manage and mitigate externalities and transform value chains to achieve a healthy planet.

  Planetary Health also prompts a search to find ways for all parts of value chains to remain commercially viable while being compatible to the health of the planet and positively enhance human health. This is done, for example, by designing tax, trade policies, incentives and enforcement mechanism that will direct and empower businesses to be more compatible with Planetary Health.

- **Food Systems**

  Food production creates a dilemma where on the one hand there is a need to provide food for the global population using arable land and fresh water, but on the other hand, recognising the huge environmental stresses that the agriculture sector is causing through carbon emissions, the use of fertilisers, and the conversion of land for agriculture and animal husbandry. This has led to biodiversity loss, land degradation and water scarcity.

  The challenge therefore lies in meeting food demand of a growing global population in the face of a changing climate, increasing water scarcity, degraded arable land, declining fisheries and pollinators and other biophysical changes, while trying to ensure that no further damage to biosphere is being done. Food use and food waste is another area of concern too. Food waste not only pollutes but also emits greenhouse gas emissions. A Planetary Health lens draws attention to the dilemma between the need to increase food production and the environmental damage it causes.

- **Direct Environmental Destructions**

  Direct environmental destruction can be brought about by mining activities, land clearing, conflicts, and natural

[17] "Building sector emissions hit record high, but low-carbon pandemic recovery can help transform sector – UN report," UN Environment Programme (UNEP), last modified December 16, 2020, https://www.unep.org/news-and-stories/press-release/building-sector-emissions-hit-record-high-low-carbon-pandemic

disasters, among others. These will affect human health directly and indirectly by exacerbating the risks of communicable and non-communicable diseases alike.

Direct impacts on human health are as follows. Climate change, biodiversity loss, land use change, pollution, and a change in biogeochemical cycles affect the transmission of zoonotic and non-zoonotic pathogens to humans.[18] Thus, continuing environmental destruction is likely to increase the risk of exposure to infectious diseases and accelerate the outbreak and spread of new diseases.

Likewise, the prevalence of non-communicable diseases is likely to increase. Air pollution is a risk factor for ischemic heart disease, cerebrovascular disease, chronic obstructive pulmonary disease, and lung cancer. Hotter weather worsens cardiovascular through sleep disturbance[19] and a reduction in physical activity,[20] renal disease due to dehydration, and respiratory disease.[21] Increasing salt level in the drinking water, brought about by climate change-induced sea level rise, of the affected populations may lead to increased cases of blood pressure.

The indirect impacts of environmental changes on human health cannot be discounted either. Climate-induced disasters affect the provision of healthcare services to patients by disrupting transportation and drug supply chain, causing power cut, among others. The conditions of people with respiratory diseases, diabetes, cancer, and cardiovascular diseases are likely to get worse after disasters.[22]

Population displacement that follows disaster events pose threats to human health too. Migration may affect the spread of infectious diseases and the provision of nutritious food cause distress and other mental health problems and aggravate non-communicable diseases. The location of refugee camps or urban areas may not be completely prepared to receive a sudden huge influx of people. As a result, access to fresh water, clean food, and sanitary facilities may become inadequate, thereby causing cholera, dysentery, typhoid fever, hepatitis A and E, and other water- and food-borne diseases to spread.[23]

Furthermore, refugee camps are often crowded. Measles, meningitis, acute respiratory infection and vector-borne diseases such as malaria and dengue are likely to spread in a crowded living condition. There are other risks too such as the propensity of sexual violence and resulting sexually transmitted diseases, and migrants' low immunity against the diseases found in receiving areas. In view of environmental changes and the possible implications on human health, Planetary Health thus considers the prevention of disasters and conflicts to be the best remedy.

This section demonstrates the different ways the health of the environment can be compromised and how it can affect human health. Given its emphasis on improving environmental quality, Planetary Health generally endorses ongoing environment-related initiatives such as low-carbon development, the reduction of deforestation and the loss of arable land and soil, the safeguard of freshwater resources, and climate adaptation. Examples include the

[18] Richard S. Ostfeld and Felicia Keesing, 2020, "Planetary Health and Infectious Disease in Planetary Health: Protecting Nature to Protect Ourselves," in *Planetary Health: Protecting Nature to Protect Ourselves*, eds. Samuel Myers and Howard Frumkin (Washington, Covelo: Island Press, 2020), pp. 285-323.

[19] Nick Obradovich, Robyn Migliorini, Sara C Mednick, James H Fowler, Nighttime Temperature and Human Sleep Loss in a Changing Climate. 2017. Sci Adv. May 26;3(5):e1601555. https://pubmed.ncbi.nlm.nih.gov/28560320/

[20] Nick Obradovich and James H. Fowler, 2017, "Climate Change May Alter Human Physical Activity Patterns," *Nature Human Behaviour* 1(0097). https://www.nature.com/articles/s41562-017-0097#:~:text=Taking%20a%20yearly%20sum%20of,individuals%20on%20average%20by%202099.

[21] Kirk R. Smith, A.Woodward, D. Campbell-Lendrum, D.D. Chadee, Y. Honda, Q. Liu, J.M. Olwoch, B. Revich, and R. Sauerborn, "Human Health: Impacts, Adaptation, and Co-benefits," in *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel,A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White. (Cambridge, UK and New York, USA: Cambridge University Press, 2014), 709-754. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap11_FINAL.pdf

[22] Benjamin Ryan, Richard C Franklin, Frederick M Burkle Jr, Peter Aitken, Erin Smith, Kerrianne Watt, Peter Leggat, 2015, "Identifying and Describing the Impact of Cyclone, Storm and Flood Related Disasters on Treatment Management, Care and Exacerbations of Non-communicable Diseases and the Implications for Public Health," *PLoS Curr*. 28;7:ecurrents.dis.62e9286d152de04799644dcca47d9288. https://pubmed.ncbi.nlm.nih.gov/26468423/

[23] Lauren Herzer Risi, Caroline Kihato, Rebecca Lorenzen, and Howard Frumkin, 2020," Environmental Change, Migration, Conflict, and Health," in *Planetary Health: Protecting Nature to Protect Ourselves*, eds. Samuel Myers and Howard Frumkin (Washington, Covelo: Island Press, 2020), pp. 189-220.

use of drought-tolerant crops and soil-conserving techniques, the restoring of coastal natural barrier systems such as mangroves, coral reefs, vegetated dunes and wetlands. Planetary Health likewise supports armed conflict prevention, effective and accountable governance, fair distribution of resources, and the provision of health care and education.

Beyond advocating such initiatives, Planetary Health's system-level approach considers the possible trade-offs of these initiatives and looks for solutions to minimise them across sectors and beyond borders. Considering its systemic nature, the effectiveness of this concept will depend on how widely it is adopted and integrated in national policies. As long as national policies remain focused on national interests, including environment-related interests, achieving Planetary Health ideals is challenging. Against this backdrop, the following section describes how Planetary Health is interpreted in selected countries in Asia.

Planetary Health: Reflections from Asia

Unlike sustainable development and low-carbon development, Planetary Health is a relatively new term in Asia. The recent 6th NTS-Asia Consortium Conference held in April 2022 in Singapore brought together some of its members to investigate what Planetary Health may mean in Indonesia, Japan, China, India, and Bangladesh. This preliminary discussion was helpful in mapping how the concept intersects with the current challenges facing those countries.

The Covid-19 pandemic is a good starting point given the immediate relevance to prevent future pandemics. In Indonesia, the ongoing response to the public health crisis creates a dilemma between human health and environmental health. The immediate relevance of Planetary Health can be applied to the massive use of disposable plastic-based masks has resulted in mounting plastic waste. Increasing plastic waste volume aggravates existing pollution problems in the land, the rivers, and the oceans, which eventually affects human health. The response to Covid-19 pandemic therefore creates a vicious cycle where a particular health problem is being addressed at the risk of generating new health problems in the future.

In response to a similar pandemic situation, Planetary Health prompts more careful thinking on mask-use, waste management, and related policies. It is mindful of when it is necessary to wear disposable masks, when it is sufficient to don reusable masks, and when one can do without masks altogether. It will also look to identify research needed to produce more environmentally friendly masks and make provisions to make them widely available at low costs in all countries. The concept prompts governments to improve waste management capacity at local, regional, and national levels, and formulate solutions to speedily clean up the land, the river, and the ocean from pandemic-related waste. In Japan, Planetary Health is associated with efforts to closely examine the socio-environmental factors affecting the number of Covid-19 morbidity and fatality. These will be critical in formulating interventions needed to prevent future pandemics.

At this junction, it is apparent that Planetary Health offers an anticipatory and preventive approach to address a policy dilemma. By espousing such a view, governments and societies are better prepared to respond in a way that is less environmentally intrusive during a public health crisis.

In India, the Planetary Health concept speaks to the tension between the economic development imperative and environmental care. The utilisation of natural resources is central to many economies and has often led to environmental destruction. In this regard, the problem of freshwater provision is especially critical in India. As developing countries expand their economies, the adoption of a Planetary Health approach will sensitise governments and the business sector of the maximum limits that natural resources have, and enable exploitation practices that take place without exceeding nature's capacity to replenish them.

It likewise considers the viability of economic growth within such limits and seeks for alternative economic models and concepts that will allow the economy to thrive even within such limits. This contrasts with the present economic growth model that narrowly focuses on continuously expanding the Gross Domestic Product (GDP) and heavily relies on consumption. A Planetary Health approach encourages analysis of the drivers of natural resource misappropriation and find ways to address them, attempt to make economic activities less polluting, and ensure that policymakers and law enforcement officials will stay committed to environmental protection even when competing interests rise.

Considering its systemic scope, Planetary Health considers other issues as plausible trade-offs to environmental commitments. India, for example, sees the war in Ukraine as a potential distraction to environmental efforts. As countries channel more money to militaries and humanitarian assistance, fears loom that the care of the planet will be neglected or at least receive less attention. Additionally, as previously mentioned, refugee flows either within Ukraine itself or to other countries can potentially cause environmental pressures and create health problems such as cholera and other water-borne diseases if the temporary shelters do not have adequate sanitation. Bangladesh shares a similar concern regarding their own refugee situation considering increasing climate-induced flooding risk in the country.

In view of such situations, Planetary Health prioritises the use of weaponry that emits greenhouse gases the least and damages the least. It also pushes for the greening of the defence sector. Pertaining refugees, the governments of recipient countries will anticipate the causes and impact of environmental pressure and make the provision of decent, safe, clean, hygienic, and environment-friendly refugee shelters a priority. It also finds ways to ensure that the provisions of water and food and waste management for the refugees do not impose excessive stresses on the ecosystems. More importantly, Planetary Health pushes for ongoing wars to stop soonest possible given their inherently destructive nature.

India likewise sees the potential of the framing of Planetary Health in addressing various challenges found in the implementation of existing environment-related policies. These include corruption, a lack of institutional capacity and resources, and a lack of coordination among institutions, among others. This is done through affecting mindset change among government officials, lawmakers, businessmen and other stakeholders involved. Prioritising the environment and ecological justice may become a new dominant norm, and this may render them more reluctant to bend to corrupt practices that allow illicit activities such as poaching, illegal fishing and logging, and institutional ego that jeopardises environmental objectives.

China sees transboundary pollution concerns as an area where Planetary Health thinking can contribute to creating a more robust framework to address them. Drawing from the Fukushima nuclear power plant incidents in neighbouring Japan, and other Not In My Back Yard (NIMBY) anti-pollution resistance movements in certain areas, Planetary Health can potentially generate a space of dialogue where concerned parties, including members of the public and civil society groups, can come together and formulate ways to deal with identified dilemmas and trade-offs.

Indonesia perceives the relevance of Planetary Health in the response to climate change. Going for a low carbon economy is the main strategy to cut down emissions and avert the devastating impact of global warming. While sustainable development and low-carbon development concepts have been increasingly accepted and mainstreamed in national development policies, the adoption of the Planetary Health lens will give renewable energy development a stronger and speedier push while rendering coal power plants increasingly obsolete. This is especially important in coal-producing countries like Indonesia which predominantly use coal for their electricity generation.

The adoption of Planetary Health encourages an open and receptive response to restrictive global trade policies such as the European Union’s Carbon Border Adjustment Mechanism (CBAM), which is projected to affect

Indonesia's trade to Europe negatively.[24] Instead of getting defensive to preserve Indonesia's trade interests and arguing why the current methods of production work just fine, the understanding of Planetary Health will make policymakers and businesses more willing to revise policies and production processes to adhere better to sustainability praxis as called for by the CBAM.

Given the need to initiate mind and behavioural changes, a Planetary Health perspective supports think tanks and universities to stand at the forefront in translating science into public knowledge, public movements, and public policies.

The diverse interpretations of Planetary Health in these Asian countries suggest that the concept can be relevant on multiple fronts. By and large, it is seen as a term that can potentially help fix the gaps found in existing responses to environmental pressures. From Covid-19 responses to the economic growth model, to wars, to climate action, to governance problem, Planetary Health thinking can aid in seeing how these affect the environment and human health. Its versatility suggests that Planetary Health is likely to have multiple implementation trajectories in Asia, therefore. This emphasises the need for dialogues and coordination to generate the kind of synergy across sectors and across borders that ultimately contributes positively to the health of the planet.

Conclusion

Environmental considerations are an inherent component in sustainable development and low-carbon development concepts. The Planetary Health approach is similar in that regard but is different in its emphasis. The biggest potential contribution of the Planetary Health concept is in prompting the question: "how does a particular activity negatively affect the environment and human health across sectors and across borders, and what can be done to mitigate such risks at a systemic level?"

Environmental degradation and its effects on human health can be discerned from a wide range of issues including food systems, growing urban spaces, unabated energy uses, climate change, conflict, human displacement, among others. They can aggravate communicable and non-communicable diseases directly and indirectly. Thorough examination into the ongoing Covid-19 pandemic can play an important role in establishing the socio-economic and environmental factors that may have contributed to the outbreak, spread and impact of the coronavirus. This knowledge will be beneficial to formulate anticipatory policies that aim at preventing future pandemic to happen.

Planetary Health generally follows the same line as sustainable development and low-carbon development visions, and can therefore utilise existing tools, such as tax and incentives to promote renewable energy development, bans and limits to control pollution, among others to achieve its ideal.

The emphasis placed on the impact of environmental destruction on humanity's own survivability may generate stronger political will, which can potentially engender firmer commitment for Planetary Health across sectors, mitigate policy dilemmas, and create better synergy among policy objectives and actions. Working on certain objectives in isolation encourages zero-sum games, and Planetary Health endeavours to break these siloes to enable a broader vision that positions the overall health of the planet as the ultimate objective.

[24] United Nations Conference on Trade and Development, *A European Union Carbon Border Adjustment Mechanism: Implications for Developing Countries* (Geneva: UNCTAD, 2021).

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