

VICE VERSA

journalism on
global development

PLANETARY HEALTH

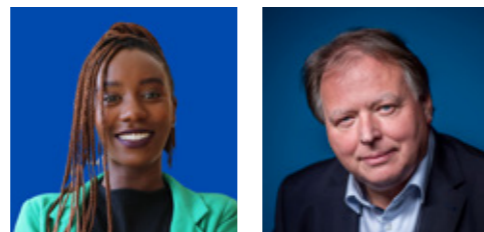


Planetary Health

Rising temperatures, rising challenges
Climate change's toll on health

Doctors of change
*The rising activism in healthcare and
its impact on medicine and the environment*

Editorial



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It was in the spring of 2022 when our reporter, Marlies Pilon, interviewed professor, doctor, and activist Renzo Guinto from the Philippines. It was the first time we heard the term 'Planetary Health.' The article's headline was 'Planetary Health is the recipe to heal the world.' Guinto, also known as Mr. Planetary Health, sighed in the piece: 'Now I have two patients: human and planet.'

Marlies was inspired and enthusiastic after the conversation with Guinto. She was told that the Anthropocene needed a new compass, with doctors and healthcare professionals showing the way. After all, the biggest threat to public health is the man-made climate crisis. It is time for the medical community to recognise that.

More than a year and a half later, we have a special edition on Planetary Health, again in collaboration with the Knowledge Centre Global Health. On Guinto's advice Marlies travelled to Dalin, a town in Taiwan's rural southern part. The city is home to the first hospital in Asia to pledge carbon neutrality by 2050: The Dalin Buddhist Tzu Chi Hospital.

She has written an inspiring report on Dr Lin and his team. 'Our mission is to give people love, inner peace, and strength—not just medication. We are a health-promoting hospital. That means we don't only care for sick patients, we also want to uplift the community by preventing diseases,' the doctor told her.

The Taiwan story is one of the highlights of this edition. It appears on the eve of the European Congress on Global Health to be held this year in Utrecht, the Netherlands, Planetary Health is also the theme at the congress titled *Shaping the future of equitable and sustainable planetary health*, showing how vital it is regarded in the medical sector.

This Vice Versa Special Edition is a wake-up call, as evidenced by the report on Turkana in Northern Kenya, where climate change's effect on people's daily health is evident. Or the column by clinical officer Risper Sarota, who gets more and more people at her office every day with complaints arising directly from climate change.

This special also shows how healthcare professionals are struggling with the issue. Is one patient (the human being) not complicated enough for a medical professional? Do we really have to add another one (the Earth)?

But above all, with this special edition, we also want to inspire and show how things can be done differently, as the hospital in Taiwan convincingly does. And as Dr Lin says: 'Never lose courage, never lose faith. Nothing in this world is impossible with confidence, determination, and perseverance. But the magic is in the action! So start small, start today, and stay committed.'

Eunice Mwaura & Marc Broere
Editors-in-Chief



28

4. Towards planetary wellness

A compass for humanity's survival
by Marlies Pilon

8. Connecting the dots

Healthcare, planetary health, and global citizenship
by Laurens Nijzink

10. Healing our planet

The vital connection between healthcare and climate sustainability
by Sarah Haaij

13. Rising temperatures, rising challenges

Climate change's toll on health
by Risper Sarota

14. Healthcare's dual imperatives

Bridging planetary health and reproductive rights
by Irene de Vries

16. Healing hands, healing earth

How nurses are paving the way to a greener future
by Marlies Pilon

32



18. The healing heart of Taiwan

The Dalin Buddhist Tzu Chi Hospital's green revolution
by Marlies Pilon

26. Ecocide in conflict zones

Exploring the interplay of climate, conflict, and environmental crimes
by Eelco Jacobs

28. Doctors of change

The rising activism in healthcare and its impact on medicine and the environment
by Marc van Dijk

32. Thirsting for change

A mother's struggle from Turkana's arid frontlines
by Rael Lomoti

36. Beyond academia

Building a sustainable future through transdisciplinary collaboration
by Ellen Mangnus



18



Planetary Health; protecting nature is protecting ourselves

The man-made climate crisis is now recognised as the biggest threat to global public health. This realisation has led to increased awareness of what data scientists have been predicting for decades. Planetary Health, a new solution-based science, urges researchers worldwide to expand their academic specialisations and explore a more holistic and integrated vision of the interconnectedness between people's health and the planet. This approach is essential for the health of the living world. *Text: Marlies Pilon*

Welcome to the Anthropocene, the proposed name for the planetary epoch in which humans are the dominant force of nature on Earth. The climate crisis and biodiversity loss turn the planet into a rapidly unfolding apocalyptic nightmare, with the least responsible parts being the hardest hit. This unearthing reality is something we cannot run away from or consume our way out of. It tells us a profound spiritual message; what we do to our environment, we ultimately do to ourselves.

If we are the air we breathe, the food we eat, and the water we drink, perhaps we are not that separated. Instead, we are much more interconnected with animals, plants, and others than we thought. That calls for a re-definition of who we are and how we treat the world around us. The outdated belief that we are 'civilised' served as a justification that those who are not can be tamed or exploited without spiritual or legal consequences.

This proved to be very unhealthy for everyone involved. The air we breathe is heavy with carbon monoxide, while the food we consume is stuffed with pesticides. The COVID-19 pandemic is a direct effect of how humans treat animals. We have replaced tropical rainforests with palm oil plantations, while rainy seasons can dry up or vice versa. At night, we hear silence instead of crickets. Microplastics swim all around us; in the fish we eat and the bottled water we drink - they have even entered our placentas.

The physical, chemical, and biological systems of the natural world are so fundamentally altered by human activity that the boundaries between 'planet', 'nature', 'human', and 'artificial' are dissolving. Any diagnosis or possible cure for the spiritual and ecological crisis of our times must, therefore, also transcend traditional man-made borders and boundaries; unite the local with the global, the now with the future, and the health of the planet with the health of all sentient beings. How are we going to do that?

The revolutionary solution-based science of Planetary Health was born in 2015 from the realisation that the status quo was not designed to bring the system change the world desperately needs. The Lancet Commission on Planetary Health defines it as: *'... the achievement of the highest attainable standard of health, wellbeing, and equity worldwide through judicious attention to the human systems - political, economic, and social - that shape the future of humanity and the Earth's natural systems, defining the safe environmental limits within which humanity can flourish.'*

Planetary Health is both a fundamental and applied science and social movement. It unites academics worldwide and urges them to adopt a holistic and integrated vision of the interconnectedness

of people and the planet's health. It prescribes urgent and holistic cross-border climate action across academia and beyond. Scientists should look for more innovative ways of collaboration - inside and outside academia - and join creative, participatory actions that make an impact.

At the opening speech of the First European Planetary Health Hub convening in the spring of 2023, all members were encouraged to, not only bring their scientific rational selves to the table, but their artistic, emotional, and spiritual selves too. When Renzo Guinto studied medicine in the Philippines, he witnessed the suffering and diseases caused by climate change. 'I saw how air pollution increased heat while disrupted seasons made patients sick.

'Through them, I became more aware of the climate crisis, governments' failures, and poor people's desperation. At that point, I could no longer be that typical doctor who sees patients from behind a desk, occasionally pulls out his stethoscope, and writes a referral note.' Guinto ended up in a 'dizzying mental spiral.' He desperately needed some kind of guideline to lead him through this all-encompassing web, which he found in the concept of Planetary Health.

'Organisations or governments cannot focus on, SDG 14.3 and expect the world to change.'

'It is like a constructive compass that shows me the way and gives me hope. Now, I have two patients: humans and the planet. By the planet, I mean the web of life. Everything is connected. It's really that simple!' He smiles enthusiastically. Guinto is now the director of the Planetary and Global Health programme at St. Luke's Medical Center College of Medicine in the Philippines. To explain the concept to his students, he uses the analogy of Google Maps. 'Planetary Health gives us a clear and wise perspective to see and address the interlocking crises of our time.'



Pim Martens

Pim Martens has a PhD in applied mathematics and biological sciences. He is a professor of Planetary Health, Dean of the University College Venlo, and a researcher at the System Earth Science Institute at Maastricht University. Martens founded AnimalWise, a 'think and do tank' integrating scientific knowledge and animal advocacy to bring sustainable change in our relationship with animals. He wrote the book 'Holy Nature' which features interviews with indigenous and religious leaders about animals, plants, and the planet. Martens served as a member of the Royal Academy of Arts and Sciences, Planetary Health committee.

to the party; they should not claim the concept and make it about waste reduction in the operation room.

Of course, that is significant also, but that is not what Planetary Health fully entails. Yes, it is also about our health. But we are just one of many elements in a very complex system. For me, Planetary Health is not about treating sick people but about how not to make everything around us sick in the first place! That means we should not look at this from a human-centred perspective because it is what got us into this trouble in the first place.'

For me, Planetary Health is not about treating sick people but about how not to make everything around us sick in the first place!

Therefore, the original definition of Planetary Health, as proposed by the Lancet Commission (see above) in 2015, is still too human-centred for Martens' taste. 'It is still fundamentally concerned about creating the right environment for humans, instead of respecting the intrinsic value of animals, plants, and the soil.' Professor Martens keeps reminding his students and other researchers that the roots of Planetary Health were formed way before 2015, in the ecology movement of the 1970s which looked at planetary boundaries and the interconnected complexities of life. He stresses that Planetary Health is about the complexity and holistic relationship between people and nature.

Professor Martens thinks education has an integral role and needs to become whole again. 'Currently, at all levels, most students and teachers are amateurs regarding the climate and biodiversity crisis. Educational institutions can teach about the SDGs or demonstrate circular projects using cutting-edge technologies. But we don't require more technology per se, what we need is to include the social and cultural angle as well. Economy classes still price private markets and endless economic growth. Medical curricula almost exclusively deal with treating sick people.'

What we need are research groups from different disciplines creating projects with a holistic vision together with local farmers, artists, citizens, and decision-makers. I urge students and researchers to venture outside university walls. I encourage them to think and experiment with things like regeneration, community food forests, adaptation, citizen councils, and so on. Let storytellers tell about findings in local theatres and movies, involve decision-makers, and let research count in the real world. Liberate research articles from behind privileged paywalls so that academic knowledge is available for everyone in society.'

Professor Pim Martens is also enthusiastic about the global momentum for this new relationship between humans and the planet. But, the newly appointed Chair of Planetary Health at the Faculty of Science and Engineering at Maastricht University, the Netherlands, is also cautious about it not becoming another hollow container buzzword. He was Chair of Sustainable Development before and saw how that word was used and abused in almost all political speeches, technological developments, international treaties, and most ordinary household items.

'It quickly got hijacked by commerce and decision-makers.' For example, Martens points out that the Sustainable Development Goals (SDGs) are full of good intentions that only work together as an integrated whole. 'Organisations or governments cannot focus on SDG 14.3 and expect the world to change. Their view of sustainable development, he says, is subservient to economic growth dogma. It still focuses on people's needs, not the planet. He does not want something similar to happen to Planetary Health—but says the first signs are already on the wall.

He sees Planetary Health as a form of sustainable development 2.0. To avoid it from becoming another container concept, he thinks it is imperative to interpret it as something solely medical, just because it has the word 'health' in it. 'The medical world is quite late

The four pillars

For Professor Renzo Guinto, Planetary Health is founded on four pillars.

The first is transdisciplinary cross-pollination. 'Scientists like to throw words around like multidisciplinary. But let's be honest, we walk around with big blinkers. We need to knock on each other's doors more. Not only in the same building but across disciplines and national borders. Getting out of the comfort zone and embracing new faces and ideas, even if they are not based on Western principles. Universities and academia are responsible for facilitating this. The West, and the Netherlands, have the financial resources for this, which southern countries often lack.'

The second pillar is an intergenerational vision. 'It is the understanding that this is not just about your health or mine, but our children and those not yet

born. With every euro of subsidy for oil and gas or every rainforest we cut down, we lower their chances of survival. The model of planetary health is an invitation to be responsible ancestors. I want children in 2122 to read history books that say our Corona and climate generation made the right choices. As long as our economic models harm their future, they are not future-proof. Children yet to be born deserve to inherit a prosperous and healthy world from us.

The third pillar is urgency. Guinto: 'Most policymakers pretend the world is not on fire, while our current way of life destroys our prosperity and health. Our governments think in terms of election cycles. Where is that green, new normal we discussed during the pandemic? We still have some years left to change the tide. We have to stabilise the climate, or

new diseases will exponentially hit us. Doctors worldwide provide excellent care, which was exacerbated by the Corona pandemic. We are respected. Let's use that power and privilege to lead the transformation of a healthier world. This is now medical priority number one.'

The fourth and final pillar of Planetary Health, says Guinto, is new storytellers. 'Science, statistics, and graphs are not enough to wake us up. Environmental researchers have warned us about global warming since the late 1980s. We need stories that appeal to the heart and soul, and that will help us understand we are part of the web of life. According to the United Nations, indigenous peoples are only two percent of humanity, yet they protect eighty percent of our biodiversity. I want to learn from them, but where are those voices?'

Renzo Guinto

Renzo Guinto is the Director of the planetary and global health programme at St. Luke's Medical Center College of Medicine in the Philippines. He is also the Chief Planetary Health Scientist of the Sunway Centre for Planetary Health in Malaysia. Guinto has published more than 100 articles in scientific journals, books, and popular media. He has also directed and produced short films that communicate the message of planetary healing to the world. Renzo is an Obama Foundation Asia-Pacific Leader and Aspen Institute New Voices Fellow.



Despite words like 'extinction', 'apocalypse', and 'doom scrolling' flying all around us in 2023, both Guinto and Martens are remarkably hopeful about the future. Guinto is a defining figure in the foundation of a planetary health community that inspires others. Through his teaching, he sees the passion and holistic understanding of the need for a new way forward for humanity in his students' eyes. 'Yes, I am hopeful. But also, we cannot afford to lose hope,' he says. Martens adds that some people might believe the Earth would be better off without the human species, but he thinks that is not the case.

'We have created unhealthy systems, but we can change them. I think the Earth needs us just as we need it. For my research, I interviewed indigenous people from all over the world. What they shared is a sense of wonder and respect for all living things.' Chief Phil Lane, who represents the Dakota and Chickasaw tribes of North America, reminded Martens that all people are indigenous to Mother Earth. This quote stayed with him because he believes, intuitively, deep down, we all know how to treat our planet.

'Most children have it, but we lose it somewhere along the way. Above all, children, students, and adults need a renewed sense of joy and wonder about the intrinsic value and beauty of the magical world around us. Step outside and feel it! When you respect the Earth, you respect life and yourself. That, to me, is the essential and hopeful message of Planetary Health.' ●

Both Renzo Guinto and Pim Martens will speak at the European Congress on Global Health from 20-23 November in Utrecht, the Netherlands. This year's focus is: 'Shaping the future of equitable and sustainable planetary health.'

Caring for Communities and the Earth:

Three Global Voices in Planetary Health

In a world where healthcare professionals are at the forefront of safeguarding human well-being, a select few are extending their care far beyond the confines of the hospital walls. Meet Christine Williams, Anna Kathrina de Jesus, and Ugyen Tshering—remarkable individuals who are redefining the role of healthcare practitioners in the context of planetary health. They recently graduated from KIT's Masters Course in Public Health. So, how do you face Planetary Health in the workplace? Vice Versa takes a tour of Sierra Leone, the Philippines, and Bhutan.

Text: Laurens Nijzink



Christine Williams looks beyond the individual. As a physician specialising in cardiology and internal medicine, she focuses primarily on cardiovascular and other non-communicable diseases.

Although she works in a hospital in Freetown, Sierra Leone's capital, her interests extend beyond the treatment room. She is aware that the well-being of her patients depends greatly on their supporting social networks and society as a whole. Cultural beliefs impact how patients and family members perceive disease and act upon it. 'What can I do so these patients remember to take their drugs and eat the right food?' she wonders.

Another question that worries her is the fragility of health systems; something she has experienced personally in her daily work. 'First, we had a civil war that lasted for about ten years, then a severe Ebola crisis hit the country, and most recently we have had to deal with the Covid pandemic.'

These are crises that not only require acute care—often unavailable—but have a pervasive impact on the provision of all health services. Beyond making the most of what is already available, what else can we do to strengthen the resilience of health systems?

These are some of the questions that Christine raised during her Masters in Public Health at KIT Royal Tropical Institute last year. She learned to consider her clinical work as a physician as part of a bigger picture: culturally and in terms of health policy. Another eye-opener for her has been the value of qualitative research. She has always been interested in the 'why,' and qualitative research focuses exactly on that. Why don't people adhere to their prescriptions or follow lifestyle changes and food advice? These are the kinds of questions that Christine would like to see addressed in health research and policy initiatives.

With the insights gained in her Master's, Christine feels better equipped to seek collaboration with Sierra Leone's Health Ministry and contribute to their strategic plans. Which brings her to the even bigger picture of planetary health. In Sierra Leone, climate change is endangering the supply of vegetables.

Harvests fail due to increased flooding—a huge problem in and around Freetown—or other extreme weather occurrences. 'As a cardiologist, I am telling my patients to eat healthy food, but that is made more difficult by the shrinking supply of vegetables on the market,' she says. 'Consequently,' she concludes, 'climate change is a health issue.'



Anna Kathrina radiates joy and relief. She just had her final oral exam for her Master's in Public Health, and it went well. She is confident she will pass. She is a pediatrician from the Philippines who has been working in the humanitarian sector since 2016. In the past few years, she had to overcome two challenges.

'I look young, and I am short,' she says. 'Most people I work with are male and older. It's sometimes difficult to earn their trust and convince them to take you seriously. That you might know things they don't or do things they can't.' Another hurdle she had to overcome was of a psychological nature. She tended to be too attached to her patients, particularly children. She found it almost impossible to let go of incurable patients.

'At one point, I realised I had to distance myself a bit more from the child and think of the bigger picture—the parents, my colleagues, family members of the patient, and the hospital.' During her course, she had a revelation. Several loose thoughts and ideas she had for years suddenly got a name: planetary health. 'This aligns with what I want to do in the future,' Anna Kathrina says.

She believes organisations in the humanitarian sector should devote more attention to environmental sustainability and planetary health issues. In the countries they work, they should set an example of how to live and work, take care of the environment, and provide health care. For instance, the way they generate and use energy, or how they treat waste, and—Kathrina's field of expertise—how to deal with mounting resistance to antibiotics and the way bacteria are evolving. 'It's all interconnected,' she says.

'The concept of planetary health has broadened my perspective on health care, and it all makes sense to me. This is what I should focus on in the future.' Even before graduating, Kathrina found a new job with a humanitarian organisation where she could apply her newly gained knowledge.

It starts with developing good policies and considering environmental sustainability issues. Engaging the Ministry of Health is vital at this point. But a robust health policy implies listening to the beneficiaries, learning from them, and engaging them all along the way.

Lastly, to build a better planet, Anna Kathrina stresses, we should all act as responsible human beings, not only as an individual but also taking into account our wider environment; the planet.



At the beginning of the interview, **Ugyen** asks if he may start with a traditional Bhutanese greeting. He takes a slight bow, stretches his hands out with the palms up, and says: 'kuzuzang-po la,' meaning 'hello.'

As a child, Ugyen wanted to become a doctor. He always felt a profound calling to help others. In the end, he did not become a doctor, but a senior programme officer at the Ministry of Health in Bhutan. 'My patients are my community, the population in my country,' he says.

Ugyen feels grateful that he can contribute to his community and country. It goes both ways. 'I have also gained so much from my society,' he says. He feels privileged he has the opportunity to work with people—from the grassroots to the highest position—like the Minister of Health, and even the honorable Prime Minister himself.

The concept of planetary health is close to his heart. He believes interconnectedness is crucial. He takes the example of the COVID-19 pandemic. It showed that animal health, human health, and the ecosystem are deeply connected. 'If you leave out one aspect, you will never achieve the shared goal of a healthy planet for all,' he says.

This notion of interconnectedness also becomes apparent in the concept of Gross National Happiness, an official guiding principle for the Bhutan government. As a holistic development concept, it links spiritual health to physical health and ecological sustainability. Beaming with patriotism, he maintains that Bhutan is the only carbon-negative country in the world. It emits less carbon dioxide than the amount of oxygen produced.

Balance is another leading principle for Ugyen, whether it is finding the balance between spiritual well-being and the state of the environment, or other matters. 'A balanced approach should be at the center of the solution for every challenge we face,' he says. He concludes by saying: 'As responsible global citizens, we can all learn from each other and should share our experiences collectively. Such a process will lead to solutions that will greatly benefit our planet.' •



Preserving Lives, Preserving Earth:

The Sustainable Healthcare Challenge

The healthcare industry's mission is to heal, but what if it inadvertently contributes to our sickness? While climate change affects people's health, it's also important to note that the healthcare sector itself is responsible for four percent of global emissions. In exploring ways to improve our polluting healthcare system, two experts shed light on the intersection between healthcare and the climate crisis.

Text: Sarah Haaij

At the OLVG hospital in Amsterdam, you'll find a team of dedicated employees with a 'green heart'. In their quest to make the hospital more environmentally friendly, they made a remarkable discovery: by transitioning from disposable to reusable blankets, they can save a staggering eleven thousand kilogrammes of waste annually. Surprising? Well, not that much.

Consider this: a single heart surgery generates a whopping 27 kilogrammes of waste, including aprons, disposable forceps, syringes, infusion bags, and even blankets. Most of these items end up in the incinerator. In the same disregard, last year at least 156,000 kilos of medicine were discarded in the Netherlands, posing a huge burden on the environment.

The healthcare industry improves people's health, prevents illness, and enhances quality of life. However, in recent years, it has become evident that it also has a significant environmental impact. Researchers found that the Dutch healthcare sector is responsible for 7.3 percent of the country's carbon emissions. Additionally, it is estimated that it contributes four percent of the Netherlands' waste and thirteen percent of raw material used (Source: *The Lancet Planetary Health*, "The environmental impact of the Dutch healthcare sector beyond climate change," 2022).

These are dizzying figures, not in the least for Inge Schepens, general practitioner and sustainable health care advisor at insurance company VGZ. 'As doctors, we all take an oath not to harm anyone,' says Schepens. 'However, we now know that we also cause harm to the world around us.'

Our planet is often described as being sick. It suffers from overheating, pollution, acidified waters, melting ice caps, declining bio-

diversity, and exhausted soils. Should it seek medical advice to assess the severity of its condition, the diagnosis may vary based on the expert's perspective on climate. However, there is a consensus that these environmental changes will inevitably impact health.

'The World Health Organisation (WHO) has already declared climate change as the greatest health threat of this century.'

The exact consequences are still being extensively studied, but many experts fear that they could be catastrophic. The World Health Organisation (WHO) has already declared climate change as the greatest health threat of this century. Not only is climate change a concern, but we're also witnessing the emergence of other critical issues such as freshwater shortages and the decline of flora and fauna.

The decline in planetary biodiversity poses a threat to our food supply and increases the likelihood of infectious diseases spreading. Global environmental changes, including heat stress, poisoning, migration, and conflict, are all interconnected. Already, seven million people die each year from air pollution (WHO). A recent European study found that air pollution also increases the risk of breast cancer.

In the Netherlands, we are already witnessing the impact of a changing climate in our consulting rooms. We are observing an increase in respiratory problems, allergies, tick bites, and tropical diseases, Schepens says. The moment she—a student of tropical medicine—became aware of the challenges, it became more personal. It coincided with a visit to her Kenyan in-laws on Lake Victoria. 'There you can see how climate fluctuations cause floods and how these, in turn, contribute to infections and contaminated drinking water. It is all connected.'

The interaction and (im)balance between human health and the health situation of our planet, is what is also known as *planetary health*. A relatively new field of research that focuses on global environmental change and human health. Moreover, it fascinates Schepens immensely: 'We as a health sector have a role to play,' she says. 'First by keeping people healthy and taking a critical look at ourselves, because we also contribute to the current problems. These issues are disproportionately affecting regions in the global south.'

According to her, it's time to accelerate the sustainability shift in healthcare. She is personally and professionally committed to this shift, both through

her work at VGZ and her involvement in various initiatives. For instance, she co-founded the Care and Climate working group, which consists of healthcare professionals affiliated with the Dutch Society for Tropical Medicine (NVTG).

'We deal with the influence of climate on health, healthcare on climate, and organise webinars for colleagues.' She is also a co-founder of the Green Care Alliance. This is a partnership where hospital and healthcare facilities committees and Green teams collaborate and share knowledge. For instance, Green teams offer waste scans in their hospitals, and the response from colleagues has often been of disbelief. 'Are we really creating so many emissions and waste?'

Unfortunately, we are. Whereas 20 years ago hospitals sterilised a lot of material, now almost everything is disposable. 'Throwing away material is often cheaper than reusing.' And so, it happens that tweezers used to remove one suture disappear straight into the trash. Using disposable products is probably the safest thing to do when you want to prevent infections, Schepens explains; 'However, we have to ask ourselves what new problems arise from this.'

In addition to the waste streams, there are many more environmental challenges in the health sector. The energy being used by hospitals constitutes as one of the major climate-posts. 'Think about the drugs that pollute our waters and sewers. We know that the painkiller diclofenac gets into the sewers and can eventually cause kidney problems in fish.'

Until recently, flying fifty thousand air miles a year was not an unusual score for Teun Bousema, Professor of Epidemiology of Tropical Infectious Diseases. As a prominent malaria researcher, he travelled around the world for years, going from conference to presentation, and fieldwork visit. 'Then there comes a time,' Bousema says, 'when you realise that this situation is completely untenable.'



Teun Bousema

Inge Schepens

Today, when the professor receives an invitation to speak, like the recent one from Australia, he calculates the climate impact. This means he attends events digitally or cancels visits. He often sends a world map showing the route, distance, and CO₂ emissions to event organisers when declining politely. Sometimes, he isn't thanked for it. Once a year, when he does go on a work trip, colleagues apologise for being there. "Sorry I'm here" they say to me, "but this is very important for my research."

For a long time, Bousema believed his work as a malaria researcher in Africa was so relevant that he didn't need to worry about environmental impacts. However, when asked today if his current travel policy (no private flights and only once a year for work) hinders his work and career, he responds in the negative. 'In the end, I don't think so,' he says contemplating. 'But for a novice researcher, I can imagine it's different. You might be afraid of missing out on networks, prestige, and maybe even funds. So if we accept an invitation with our research group, I let the juniors go.'

If the scientific community needs anything, it's increased climate awareness. Bousema observed growing attention to the environmental theme throughout his career, but also noted persistent greenwashing. In Copenhagen, for instance, recycled pens were distributed at a congress; 'While the flight hours of all the visitors together represented 113 back-and-forth trips to the moon. At moments like that, I can't help but wonder; what on earth are we doing?'

Naturally, carbon reduction is an important factor in this story. Nonetheless, we shouldn't be blinded by it either, the malaria researcher argues. Biodiversity loss and energy consumption are all linked to health care. 'In the Netherlands, the use of medicine has a tremendous impact, accounting for forty percent of the climate impact and seventy percent of the resource consumption in the Dutch health care system. Each year we discard medication worth one hundred million euros, highlighting the need for significant improvements in this area. In essence, our focus should not solely be on addressing issues like plastic straws or coffee cups.'

Meanwhile, there is a growing focus on planetary health in institutions. This is seen in initiatives like the Green Deal for Health-care. Care institutions, governments and companies have made agreements to ensure that the healthcare system benefits people and the planet in the long term. And not, as it does in its current form, lead to extra pollution or health problems.

Schepens: 'With each successive Green Deal, we have witnessed improvements in the agreements.' Initially, the focus revolved mainly around carbon reduction and circularity. However, now we observe a growing emphasis on prevention and education. 'These agreements are more practical and forward-thinking, with well-defined objectives.' For example, hospitals commit to offering more plant-based food options. Additionally, all healthcare organisations aim to operate in a climate-neutral manner by 2050.

Unfortunately, Schepens doesn't foresee any consequences for non-participating institutions, 'Which weakens it significantly.' Bousema shares these concerns: 'To what extent will the ambitions translate into actual change and achievements?' He observes that the initial transition to renewable energy is often relatively simple, involving solar panels and green electricity. 'Soon, the more demanding climate actions will have to be made, the ones that force us to adjust our daily working methods.'

Climate change, extreme weather conditions, and environmental changes—what makes them all so complex is the elusive nature of their consequences. Bousema poses; 'Soon the planet will become less habitable. We are possibly going to be confronted with catastrophes and conflicts. But how are they going to affect our health care? We yearn for concrete predictions, but the ramifications of extreme weather events and disasters are challenging to capture in models.'

This instability often reverberates through a country's health status, as we've witnessed in Venezuela during the recent political chaos. The number of malaria cases skyrocketed by an alarming one thousand percent increase. 'In times like these, infectious diseases such as malaria serve as a canary in the coal mine; their surge signifies deeper issues within the healthcare system.'

'In essence, our focus should not solely be on addressing issues like plastic straws or coffee cups.'

Both experts believe that the rising attention to the connection between healthcare and climate is a first step in preparing for potential crises. Schepens: 'During my medical studies, just six years ago, I never talked about healthcare and climate change whatsoever. Now planetary health is finally becoming part of the curriculum.' This means not only climate change, but also acidification of seas, and the use of raw materials; all these environmental issues are slowly taking their place within degree programmes.

'Future health care workers are hopefully becoming more aware and therefore hopefully more sustainable.' But awareness doesn't automatically lead to action. Many people and institutions express a desire to change but struggle to determine where to begin. The Dutch healthcare sector faces challenges like an ageing population, work pressure, and employee shortages. With these factors in mind, we should question if the sector is ready for necessary sustainability changes. Or as Schepens recounts responses from colleagues: 'Are we now made responsible for the climate crisis as well?'

Yet both are convinced that ensuring the continuity of care in the future hinges on promoting sustainability. Finding a balance between the health of people and the planet is not an optional extra, they say; it's the other way around: 'The healthier we all stay, the less pressure on the healthcare system.' Undoubtedly, this new reality will lead to difficult discussions.

Bousema: 'At some point, you come to that question; What level of care are we still willing and capable of providing? While personnel and financial limitations exist, we must now also consider the planetary boundaries.' As a non-clinician and non-ethicist, Bousema refrains from making definitive statements on this matter. However, he believes that a fundamental discussion about the future of our healthcare system should take place. 'We need to discuss how we are going to make ambitions, such as those formulated in the Green Deals, into daily practice. A new reality.' ●



Risper Sarota

Healthcare's battle in a changing climate

I always wake up at 6 in the morning, every day, and set my intentions for the day. One and a half hours later, I clock into work. This will be a routine working day for me at Bristol Park Hospital. I have a quick ten-minute handover meeting with my colleagues, dust, and then settle down in the consultation room to attend to patients. The room looks exquisite and features informative medical charts on the walls, an examination couch, and a working table.

The day starts slowly with a few patients. At ten, Margret—a resident of Ruai in Nairobi County—enters the room and smiles. As I greet her, she quips, 'We are used to replying to every greeting with I'm well, but I am not.' We both laugh a bit. I understand that she has grown accustomed to this room in recent months. She is in her late thirties. 'I have not been comfortable with the water provided by Nairobi City County. I think it is contaminated as it has whitish-thread-like stuff in it,' she says.

She is being treated in our facility today, for the first time, for gastrointestinal issues. However, this is not her first time visiting a health facility. She has been treated for helicobacter pylori twice since the beginning of the year, hence the change of health facility. With previous treatments, she had one to two days of relief before falling back to the usual discomforts that are now familiar to her. Today, she is ready to risk it all. Patients

with abdominal pains and loose stool have become frequent in our facility.

We attend to an average of two to three patients daily exhibiting symptoms similar to cholera, such as in Mathew's case. 'I was scared when the doctor told me I had cholera. I lost a friend to the same issue a year ago. My whole family had to be tested for it since it is easily transmitted,' says the Utawala resident.

The hospital administration has taken measures to prepare for cholera cases by creating well-equipped emergency and isolated rooms, including cholera beds. They have also ensured a constant supply of well-treated clean water. Additionally, they are working with the county government to raise awareness about the Comprehensive Cholera Vaccine (CCV) initiated by the Ministry of Health in response to the ongoing cholera outbreak.

The residents deal with dusty air and scorching sunshine, which threatens all living beings and prolongs the allergy season. Besides, it's not surprising when a child is brought into our facility with recurring or persistent respiratory symptoms. 'This is the fifth month, yet my child has not been well. It makes me sad when she can't sleep well at night due to breathing difficulties and has to miss classes when the rhinitis kicks in. She's on an antihistamine every week, which makes her look tired most of the time,' another resident of Utawala and a mother says.

These allergens can also worsen chronic respiratory conditions and contribute to asthma and asthmatic attacks. Our facility's medical team is well-trained to attend to respiratory emergencies. Climate change impacts are felt worldwide, characterised by extreme temperatures, heat waves, floods, and droughts. The story remains the same for residents of Nairobi and Machakos County in Kenya, Sub-Saharan Africa.

Residents are vulnerable to climate change health impacts, as seen in our daily visits to our Bristol Park Hospital branches within the two counties. However, little is known about residents' knowledge, attitudes, and practices regarding climate change and its health impacts. Climate change is emerging as the biggest health challenge of the 21st century as it impacts various aspects of human well-being.

At Bristol Park Hospital, we recognise that access to health is a fundamental human right and that quality health service delivery is needed. We do this by ensuring we have enough well-trained and well-motivated healthcare providers and support teams at all times, and a resilient health system that can cater to all climate-related emergencies.

To me, there is no such thing as a bad day.

Risper Sarota is a Clinical Officer and SRHR Advocate.



Climate Justice, Reproductive Rights:

A Holistic Approach to Healthcare

In today's healthcare landscape, the planetary health movement and the struggle for sexual and reproductive health and rights (SRHR) stand at contrasting crossroads. Yet, these issues are intertwined. Climate change impacts SRHR indicators, magnifying vulnerabilities. According to Irene de Vries, healthcare professionals, positioned uniquely to drive change, must integrate planetary health and SRHR into medical education. *Text: Irene de Vries*

Healthcare sector roles and accountability are rapidly gaining attention within the planetary health movement. Under the spotlight is the sector's contribution to climate change and the need to integrate planetary and global health issues into medical curricula. It is great to see so many professionals within the sector care and advocate for systemic change. This, despite the profession being known—at least in the biomedical 'Western' tradition—for prioritising individual clinical care at the expense of public health and the broader health system.

This planetary health, or climate justice movement, shows similarities with the activist movement that has strived to improve global sexual and reproductive health and rights for decades. Both are grounded in the discourse of equity and justice—focusing on human rights and public health—and are at the intersection of behavioural and social sciences. They detest power imbalances that put the most vulnerable in a position of being increasingly threatened by the lifestyle, cultural, or political dominance of others.

However, while planetary health is

What is Sexual and Reproductive Health and Rights?

'Sexual and reproductive health is a state of physical, emotional, mental, and social well-being about all aspects of sexuality and reproduction. It is not merely the absence of disease, dysfunction, or infirmity.

Therefore, a positive approach to sexuality and reproduction should recognise the part played by pleasurable intimate relationships, trust,

and communication in promoting self-esteem and overall well-being. All individuals have a right to make decisions governing their bodies and access to services which support that right.

Essential sexual and reproductive health services must meet public health and human rights standards, including the 'Availabil-

ity, Accessibility, Acceptability, and Quality' framework of the right to health.'

(Guttmacher-Lancet integrated definition on SRHR; for the full definition, read 'Accelerate progress—sexual and reproductive health and rights for all: report of the Guttmacher-Lancet Commission' (Lancet, 2018).

currently 'hot'—and has an urgency label even in the medical world—SRHR remains neglected and is regressing globally. As a result, there has been a decrease in funding, poor outcomes, and a shrinking space for sensitive issues, such as abortion, comprehensive sexuality education, and LGBTIQ+ services. Despite this, SRHR and planetary health should never be viewed in isolation.

'Climate change hurts almost all SRHR indicators, including maternal health, fertility, the risk for sexual and gender-based violence, and through the disasters that disrupt health systems and access to SRHR services,' Anke van der Kwaak from KIT Royal Tropical Institute says. She contributed to the Women Deliver report on 'The link between climate change and sexual and reproductive health and rights.' 'On the other hand, there is growing evidence that realising SRHR can accelerate climate action. This includes services and systems improvement, reducing gender inequality, and increasing the resilience of girls and women.'

This is further emphasised by Dr. Ba Sidi Yaya, President of the Association of Private Health Schools of Mali. They collaborated with public and private institutions of higher education in Mali to integrate adolescent and youth reproductive health into the basic curriculum of health and senior health technicians (also known as the FORCE project – see KIT website). 'Climate action and SRHR are linked simply because they concern everyone, particularly adolescents and young people. It is a guarantee of health for future parents and healthy children.'

Mali, like other Sahel countries, is

heavily impacted by climate change with increasing droughts, floods, and crop pests. These risks aggravate the already poor SRHR outcomes. This inextricable link between the two points to a growing need for healthcare professionals to have appropriate knowledge and skills on both issues, their intersection, and how to address them to meet the basic healthcare needs and rights of people.

'Healthcare professionals,' says Goknur Topcu, 'are the key stakeholders in improving health. We have the opportunity, and often also the power or credibility, to make a difference.' Topcu is a young gynaecologist and President of the World Association of Trainees in Gynaecology and Obstetrics (WATOG). WATOG, together with the International Federation of Gynaecology and Obstetrics (FIGO), and the International Federation of Medical Students Associations (IFMSA), worked on a joint statement of support and model curriculum for the inclusion of SRHR and well-being education into the core structures of medical curricula.

'It is strange that as a health care professional for the health of women and children, I only started to learn about SRHR, and now planetary health, once I began to engage in the international field. Yet, these are the fundamentals for rights-based and holistic health in our communities,' she remarks. So, how do we ensure the next generation of healthcare professionals is committed to improving SRHR and planetary health?

The planetary health movement can build on what the global health and SRHR movements have been advocating for,

and they should now work toward their intersection. Curriculums for medical students and early career professionals should incorporate skills and knowledge of these discourses. 'We need to understand the determinants and different complex factors that impact our public, sexual, and reproductive health and rights at the global, regional, and national level,' Topcu says, representing the voice of new healthcare professionals.

It will require the integration of planetary health, social sciences, determinants of health, human rights, medical ethics, and gender and sexuality into clinical sciences. It is a lot to handle. But, if we truly understand their intersection and commit ourselves as healthcare professionals to equitable, just, and complete health for human beings and the planet, then it is possible.



Irene de Vries is the Maternal New-born Health Advisor at KIT Royal Tropical Institute



Nursing planetary health

As trusted stewards of health and healing, nurses should care for patients, communities and the natural systems that support life on Earth. In a perfect world, we all care for our environment like nurses do.

Text: Marlies Pilon

The world's most famous and first official nurse understood that a healthy environment was fundamental to healing. Florence Nightingale presented her environmental theory in 1859 based on five essential factors that make a healthy home: clean drinking water, fresh air, basic sanitation, cleanliness, and light. She considered human beings to be a part of nature, influenced by how healthy or unhealthy the environment was.

Although some of her ideas are now outdated—nurses must be women, and nursing is an art, not a science—her environmental theory demonstrates that nurses play an essential role in understanding and promoting climate justice. If we broaden her vision of a healthy home to that of a healthy planet, we see how her five essential conditions are impacted by the man-made climate crisis. Our only home suffers from extreme temperatures, worsening water quality, drought, and air pollution. The fundamentals of her natural healing are on life support. Fortunately, we know the recipe for healing our home and ourselves, but do we care enough to look in the mirror and change our ways?

Ironically, the Coronavirus pandemic disrupted celebrations marking Nightingale's bicentenary in 2020 and commemorating her contribution to infectious disease analysis and nursing practice. Cities were turned into ghost cities when people self-isolated, wondering what would happen next. During the global health crisis, underpaid and overworked nurses were recognised as 'essential workers'

as they risked their lives to serve the public. Standing on the front-line, they witnessed grief and horror and got a standing ovation. Eventually, it faded, and the world returned to business as usual.

It is problematic that Western medicine and healthcare treat human health as separate from the natural world and non-Western healing ways as inferior. Long before Florence Nightingale, deep respect and gratitude for the forests, animals, oceans, rivers, and the moon were embedded spiritually in our relationship with nature. The 'civilised' world has mostly forgotten this sacred bond. But for indigenous communities worldwide, the intrinsic connection between humans and nature is alive and kicking. It should be nurtured like only a planetary nurse can.

To sing like a nightingale is to sing a melodious song, something we find calming and loving, that makes us want to pause and listen to it. The nightingale sings at night. Do you ever hear birds chirp? The whooshing sounds of never-ending waves hitting the sand comfort our minds. This relaxing effect is due to 'acoustic camouflage,' a passive sound that drowns out other noises and distractions. As a result, our minds become free of anxieties and other worries. How do you feel when you hear water sounds? Do you sometimes stop and wonder?

The climate crisis might feel less urgent for people who have not experienced its brutal consequences firsthand. Reading about

environmental issues regarding CO₂ or scientific predictions of what will happen thirty years from now will not make most people care enough to act. But nurses globally are standing on the frontline again, witnessing the grief and horror of floods, droughts, displacement, infectious diseases, vector-borne diseases, and malnourishment.

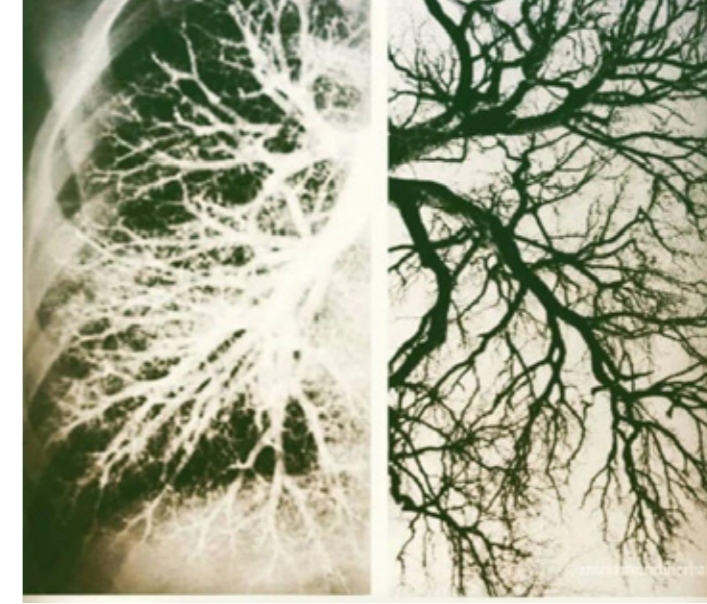
They see how the climate crisis deepens existing inequalities. Their patients are often the most marginalised; racial minorities, the poor, the isolated, people with disabilities, older people, pregnant women, and unborn babies. They know firsthand that people who contribute the least to the problem are affected the most. They understand that the climate crisis is a social justice issue. But can they also help people fall in love with the natural world again?

Next to firefighters, nurses are one of the most trusted professionals worldwide, making up sixty percent of the global healthcare workforce. Paradoxically, they work in one of the most carbon-intensive industries in the world. As trusted stewards of health and

healing, they are the ideal advocates for planetary health. They work in the clinical and public health sectors and can also play a vital role in educating healthcare professionals. Nurses have the collective potential to change the course of climate action.

The International Council of Nurses states on its website: '... leadership from nurses to take immediate action to build climate-resilient health systems is necessary. Nursing has a duty to contribute to climate change adaptation (reducing vulnerability to harmful effects) and mitigation (reducing or preventing greenhouse emissions), as it is committed to protecting health and wellbeing and promoting social justice.'

The nurse used to be somebody who cared for others. Ideally, we should all be part-time nurses and care for global health fundamentals. Let's pretend there is no other living planet like ours, and this is our historic shot at making amends. Not only because we want to save CO₂ emissions but because our faith is soulfully intertwined. Because of sunrises, willows, waterfalls, and nightingales. ●



The Nurses Climate Challenge

The Nurses Climate Challenge is a global initiative delivered by Health Care Without Harm in partnership with the Alliance of Nurses for Healthy Environments. It aims to mobilise nurses to educate health professionals about climate change's health impacts. Below are three examples of nurses advocating for increased climate action in the healthcare sector:

Maria Cassar is Head of the Nursing Department at the University of Malta and a dedicated nurse educator. Through her work, she meets people from all over Malta's health and social care systems. She sees that as an opportunity to increase awareness through practical and relatable examples of climate action. Maria and her colleagues have reached thousands of healthcare workers across

Malta about climate and health. She believes sacrifices are needed. 'How do we explain to a patient that we will turn down the AC to protect the environment?'

Floro Cubelo is a nurse from the Philippines who now lives in Finland. Like many international nurses, Cubelo still has family and friends in his home country, whom he visits on holidays. But it dawned on him that international nurses' travelling lifestyle directly contributes to greenhouse gas emissions. 'Flying from Manila to Helsinki generates 1,647 kilogrammes of carbon dioxide. There are 72 countries where an average person contributes less carbon emissions than that per year.' Now, Cubelo encourages nurses worldwide to 'plant a tree when they return home' to offset greenhouse gas emissions from their inter-

national flights. 'Nurses are the largest and most trusted group of health professionals, and we can implement effective climate policy. We need to set an example now before it's too late.'

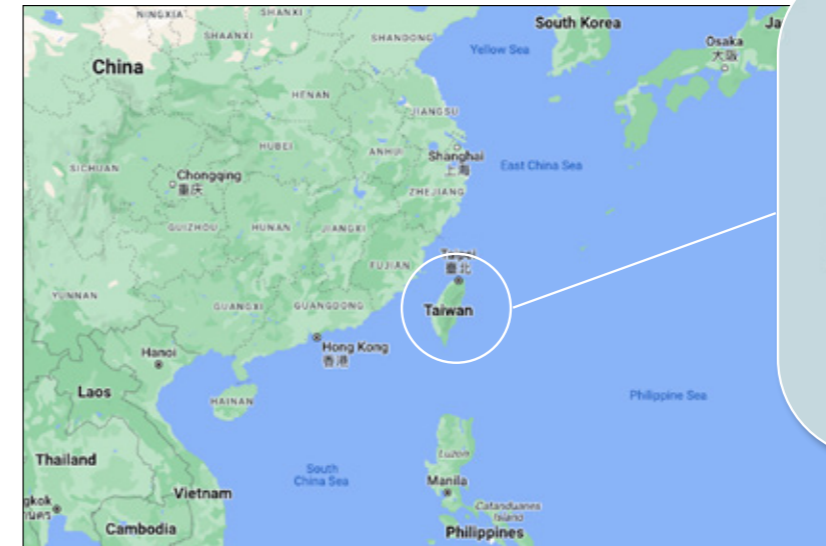
Canadian nurse Natania Abebe made a documentary exploring climate change's mental health impacts. Throughout the documentary, she attempts to normalise feelings of helplessness. However, she shares the message that people have agency and the opportunity to create change for themselves, and those around them. Abebe sits on the Environmental Justice and Reconciliation Committee within the Canadian Association of Nurses for the Environment. She encourages nurses to participate in environmental sustainability and climate action.

Buddhist doctors in Taiwan prescribe planetary healing

Medical staff and volunteers of the Buddhist Tzu Chi organisation in Taiwan practice ecological mindfulness in their 'hospital without walls.' Journalist Marlies Pilon visits the island to explore what a warming world can learn from the unique intersection of healthcare, environmental consciousness, and spirituality.



Longshan Temple in Taipei



Text and images: Marlies Pilon

With its lush tropical rainforests and seasonal typhoons, Taiwan is supposed to be one of the rainiest places in the world. But when I board the fast and futuristic Taiwan High-Speed Rail, after a short night in the vibrant capital of Taipei, the vistas through the window show not only whimsical mountains and palm trees, but dried-up rivers too. My destination is Dalin, a town in the rural southern part of the island.

The city is home to the first hospital in Asia to pledge carbon neutrality by 2050: The Dalin Buddhist Tzu Chi Hospital. The hospital is part of the unique Buddhist Tzu Chi organisation that is led from this island by its spiritual founder, often dubbed 'the Mother Teresa of the East'—85 year old Buddhist nun Dharma Master Chang Yen. From a following of 30 housewives in 1966, the organization has grown into a global grassroots organisation with over 12 million members in 54 countries.

Dalin residents—mostly farmers—have not seen a drop of rain in the last 300 days. Dotted between smartphone shops, bubble tea cafés, and noodle bars, are temples that exhale earthy, aromatic incense. Inside the temples, locals offer colourful fruits and sweets to Mazu, the sea goddess in the Taoist and Buddhist traditions. Can she help halt the disrupted weather seasons and typhoon patterns in East Asia that have thrown Taiwan into one of the most severe droughts of this century?

Almost all apps, signposts, and roadmaps are in Mandarin. I try to ask friendly locals where the Buddhist Tzu Chi Hospital is. The 'tzu' (compassion) and the 'chi' (relief) bring smiles of recognition. In Taiwan alone, the organisation has one million volunteers. This means almost 4.5 percent of the population adheres to its spiritual principles of love and the sacred value of all living beings. I am being directed towards a massive grey concrete building in the southern part of town.

It is surrounded by dozens of acres of lush green land. At the entrance hall, I am caught off guard by the sudden appearance of someone dressed in white. 'Welcome to the Buddhist Tzu Chi Hospital,' says an energetic Taiwanese doctor, whose eyes smile at me from behind coke-bottle glasses. 'My name is Dr Lin, the vice superintendent. You are most welcome.' We bow, and then he gestures to me to follow him into the hospital.

Taiwan has been a self-ruled island since 1949 and longs to be internationally recognised as an independent country. Its official status is controversial and disputed as China views Taiwan as part of its territory and wants to reunite the island with the mainland, using force if necessary. Taiwan is located at the junction of the East and South China Seas in the northwestern Pacific Ocean, with the People's Republic of China (PRC) to the northwest, Japan to the northeast, and the Philippines to the south.

The holistic Earth- and people-friendly ambitions of the relatively small hospital in Dalin—it hosts 1000 beds for patients and has 1800 staff and 200 volunteers—has not gone unnoticed. Since its inauguration in 2000, it has been winning prizes and awards. In 2007, the hospital introduced the Health Promoting Hospitals (HPH) project to staff and patients and won the first Health Promoting Hospital award from the Health Promoting Hospital International Network in 2012.

Since 2010, the Tzu Chi Medical Foundation has worked together with the International Network of Health Promoting Hospitals, which awarded them the International Environment-Friendly Hospital Team Work Best Practices Award in 2013. The hospital is also a member of the network of Global Green and Healthy Hospitals (GGHH) and won the International Leadership in Health Care Climate Challenge in 2020.



Dr. Lin

As I walk behind him into the huge entrance hall of the hospital, the air is filled with the bright and effervescent notes of an acoustic grand piano. Dr Lin explains that music lowers patients' stress levels, and calms and invigorates the senses. The man behind the piano is the son of a patient who was treated here and this is his way of showing gratitude. Other than music, the hospital offers meditation and yoga to staff, volunteers, patients, and their families.

Dr Lin: 'Our mission is to give people love, inner peace, and strength, not just medication. We are a health-promoting hospital. That means we don't only care for sick patients, but we want to uplift the community by preventing diseases.' Prevention is an important word for Dr Lin and this hospital. The aim is to prevent people and the planet from becoming sick of the emissions that the healthcare sector emits as it tries to cure sick people. This comes in the form of around five percent of global fossil fuel emissions'

'Our mission is to give people love, inner peace, and strength, not just medication.'

'If the global healthcare sector were a country, it would be the fifth highest emitter on the planet. We believe that healthcare should not treat sick people while harming other living creatures and eco systems in the process. No! Healthcare emissions directly impact health fundamentals like clean air, drinking water, and food sufficiency. In Taiwan, climate change means more heat stress, which means more polluting air conditioners. Which means more climate change. It is a vicious cycle.

'We see an increase in droughts and infectious diseases like dengue fever. So we need to prevent those emissions from sickening life on earth to make our shared future healthy for all. We need to move from 'sick care' to truly investing in 'health care'. Prevention is key!' As I follow him towards the lunchroom, every step Dr. Lin takes seems infused with a jolly sense of purpose. He hops through the space with a wide smile on his face. Perhaps that is because, for him and all the other Buddhist doctors and nurses in the hospital, every step counts. Not only on the conscious level but in a very concrete and practical way.

The ICT staff just created a trial version of the 'Green Action App'. It measures exactly how much CO₂ users save per day, and all the doctors and staff have enthusiastically embraced it. You did not eat meat today? You get thirty points. Use the elevator instead of the stairs, minus ten points. It makes the abstract term 'climate footprint' very concrete and in-your-face. Plus, the day's winner gets high-fives and extra karma points.

Motivated to help Dr Lin with his green action score, we take the stairs instead of the elevator to the third floor. We enter the buzzing hospital restaurant that serves Taiwanese, Chinese, Japa-



The Dalin Buddhist Tzu Chi Hospital

nese, and European dishes Everything on the menu is plant-based. Buddhist Tzu Chi followers believe people should not harm other sentient beings. It comes straight from the first Buddhist precept: 'Understanding that life is sacred and that all living creatures share the same desire to live, we will not take life. Out of respect for sacred life, we will strive to protect all living beings.'

Dr Lin adds that love for all living beings also includes Mother Earth because our well-being is intimately connected to our planet's well-being. 'That is why everyone in the Tzu Chi organisation tries to pursue a simple life that uses less of Earth's resources.' Here, green action is a daily spiritual practice. Hospitalised patients and staff are served vegetarian food and informed of its benefits—from a personal to planetary perspective. With a plant-based diet, the hospital saves 7500 tonnes of CO₂ yearly on food production, according to its website.

The food for the patients is not only plant-based, it comes from the surrounding sixty acres of hospital gardens connected through a smart irrigation system running on reused water. The hospital recycles around thirty percent of the total water used, equivalent to 88,800 tonnes of water. Organic food gardens are nature's healing recipe: the hospital eliminates huge amounts of emissions normally associated with shipping food and plastic packaging from all over the world.

Food is healthy, pure, and chemical-free, and anyone interested can learn traditional Taiwanese and plant-based cooking methods at the hospital. The smart use of indigenous trees, bushes, flowers, and plants serves to strengthen the soil and increase biodiversity. Patients, family members, and volunteers are encouraged to help out in the food gardens. This is because fresh air and connection with nature are what Dr Lin calls medical therapy for the heart, mind, and body.

Dr Lin smiles. 'If the whole world shifted to a plant-based diet, it would radically cut global carbon emissions and lower new and emerging infectious diseases. In particular, zoonotic diseases like Ebola, bird flu, SARS, and Coronavirus. Bats currently carry more than two hundred types of the latter. There will be another pandemic waiting to happen.

So reducing healthcare's climate impact also means evaluating our relationship with animals. A plant-based diet would reduce global land use for livestock and agriculture by an estimated 75 percent, causing a massive reduction in pollution of air and water. It would mean more biodiversity and more natural space for animals to enjoy healthy lives. These things are certainly all interconnected. It is that simple!

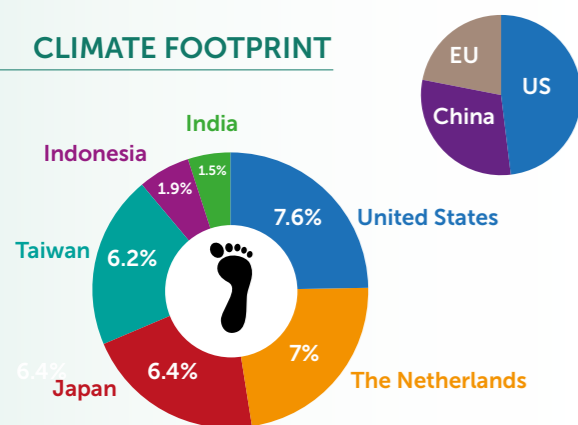
The choice is tough but I order the 'ginger vegetarian angelica duck hot pot.' It comes with a present from Dr Lin: a set of environmentally friendly and reusable chopsticks and a food bowl made from recycled plastic, both with the Tzu Chi logo and also for sale on their website. Just like all other Tzu Chi members, he carries the cherished Asian-style cutlery set with him wherever he travels. This way, the Buddhist foundation has saved an impressive six million pairs of disposable chopsticks from being used.

'We love recycling here. What more on me do you think is recycled?' Turns out his doctor's jacket, blouse, pants, and even his pen are made from 100 percent recycled pet bottles. They are manually de-bottled and stomped on by an army of tens of thousands of elderly Tzu Chi volunteers in communal recycling centres all over the island. They are shipped to the main recycling plant in Taipei. The CEO of that recycling company became so charmed by the Buddhist organisation that he gave them almost half of his company shares. 'We really run on love,' smiles Dr Lin.

As I try (and fail) to smoothly tackle the tasty ingredients of the veggie hot pot with my new forever chopsticks, Dr Ming-Nan Lin tells me the story of how this unique hospital came to be. The Dalin Tzu Chi Hospital is one of eight hospitals in Taiwan constructed by the Buddhist Tzu Chi Foundation. This is the largest Buddhist organisations on the island and can be compared to a green and Buddhist version of the International Red Cross.

Tzu Chi's core value is the deeply held belief that all people are capable of manifesting the same amount of compassion for all living beings as the Buddha. While most Buddhist organisations in the world focus on personal enlightenment and meditation, Tzu Chi members are encouraged to swap the meditation cushion for Buddhism-in-action; nurturing kindness and compassion through practice in the real world.

CLIMATE FOOTPRINT



The highest burden to the global healthcare climate footprint comes from the United States (546 million metric tons of CO₂e), China (342 MtCO₂e), and the European Union (248 MtCO₂e). Healthcare emissions make up a varying percentage of each country's climate footprint, ranging from the United States (7.6%), the Netherlands (7%), Japan (6.4%), Taiwan (6.2%), Indonesia (1.9%), and India (1.5%). Source: Healthcare without Harm.

Tzu Chi was founded in 1966 and concentrates on activities in charity, medicine, education, international relief, bone marrow donation, community volunteerism, and environmental protection. The story of Tzu Chi's founder and Dr Lin's spiritual leader, Dharma Master Cheng Yen, is extraordinary. She was born in 1937 as Wang Chin-Yun (*bright cloud*). When her father died at an early age, she lived with local Buddhist nuns for a while but ran away with another nun.

She spent the next few years living in huts and caves all over the island and studying the scriptures as a lay Buddhist. She became a student of humanitarian Buddhism and was formally ordained as a Buddhist nun at 25. Four years later, she met three Catholic nuns who asked her why, when Buddhist monks believe in universal love, they don't do charity work. When she saw an indigenous woman dying of a miscarriage because she did not have enough money to go to a hospital, 29-year-old Cheng Yen decided to start a charitable organisation for needy locals by asking thirty housewives in the village to each pledge fifty cents a day.

She called the organisation Tzu Chi (compassion relief) and established the Tzu Chi Foundation in 1966. She rejected a two hundred million dollar donation to build the first hospital. Instead, she hoped it could be built with ordinary people's contributions. This would instill love and goodness in everyone and allow them—rich or poor—to give a little bit and sow blessings for their community. In her teachings, she encourages people of all religions to become Tzu Chi volunteers and practice active engagement in altruistic activities as a spiritual practice.

She is wildly successful in Taiwan and abroad, with millions of international members and volunteers who participate in community hospice care and communal recycling projects. Master Cheng Yen, often called the 'Mother Theresa of the East' is still running the Tzu Chi Foundation. She was among the BBC's 100 most influential

women in 2022. She is considered a living *bodhisattva* and gives daily inspirational talks from her home, the Buddhist Tzu Chi temple in Hualien. She often talks about environmental protection saying, 'Inhabitants of the Earth, let us protect her so that she can remain safe and well. Only when our planet is well can humankind be safe and well. To give back to the Earth for all that she has provided to us, let us all take care of our planet together.'

Climate change and biodiversity impact the world, but their environmental, social, economic, political, and health impacts have different faces depending on where you are born. For Dalin's citizens, this is the second-longest time without rain they have ever experienced, with the last two years being the warmest of the past 100 years. And with many of the island's water reservoirs at less than twenty percent capacity, and rivers drying up, the situation is dire. The dry spell is bad news for Dalin's farmers who rely on bamboo and rice crops for survival. They also produce most of the elegant moonflower orchids on the European market.

The lack of rain threatens Taiwan's economy and political autonomy from China. The little island—about the size of Belgium—produces ninety percent of the world's most advanced microchips. These high-tech chips power everything: from your mobile phone and laptop to cars and the defense industry around the world. Companies like Apple and Google depend on them. But the production process is thirsty; you need crazy amounts of water to make just one chip—and annually fourteen million of them are produced.

The global dependency on semiconductor wafers makes Taiwan's economy the 'most indispensable in the world' (*Financial Times* '23). Taiwanese politicians believe that dependency acts as a 'silicon shield' that prevents China from military intervention. As tension in the Taiwan Strait grows, desperate Taiwanese officials try whatever

they can to keep the 'silicon shield' intact. In spring, they organised a special day off to worship Mazu, and let her make it rain again.

Other than cloud seed generators to produce rain, they have also installed tap water restrictions for citizens and small businesses, so the scarce water can be pumped into the chip-making industry and potentially keep China at bay. It is easy to understand why most Taiwanese cherish their political autonomy and don't want to fall under Beijing's rule. They long to be internationally recognised for creating one of Asia's most vibrant democracies.

This includes a free press, respect for human and animal rights, an open and proud LGBTQI community, and a tolerant religious culture that combines Buddhism, Taoism and Confucianism. Taiwan ranks first in UN's gender equality index for Asian countries. But despite its amazing track-record, China's economic sanctions on countries backing an autonomous Taiwan pay off; so far only 13 (non-western) countries have officially recognised the island as an independent, sovereign nation. Despite its uncertain status, Taiwan also has the most comprehensive universal healthcare system in the world.

In Taiwan, climate change means heat stress, more polluting air conditioners that cause more climate change which means more heatstress
It is a vicious cycle.

It closely resembles Bernie Sanders' vision of Medicare for all: it's built around the belief that everyone deserves the same level of quality healthcare. Residents can visit any medical specialist in the country and pay seventy Taiwanese dollars (two euros, red). The patient's entire medical record is stored on their digital smartcard that any health facility can access digitally. The fee is then billed directly to and reimbursed by the National Health Insurance Administration, whose administrative costs of two percent are the lowest in the world.

At the Tzu Chi Hospital in Dalin, Harriet Szu-Ching Shen—who oversees the strategy and planning for the international medical service centre—tells me more about healthcare finances. She says the hospital runs on National Health Insurance money. 'If patients can't pay for all their medical costs, the charity branch of Tzu Chi reimburses that money.' She tells me the hospital invests in community outreach programmes to save people from diseases and medical costs as well.

The hospital is strategically located in an impoverished region of Taiwan where people lack easy access to healthcare. It is called 'the hospital without walls' because besides treating patients, its goal is to uplift the surrounding communities through early detection or prevention of disease. And so, on a warm Saturday morning, Dr Lin takes me to one of Tzu Chi's monthly community outreach programmes.

We reach Dapi Township, Yunlin County. Around five hundred residents have already gathered in front of an enormous hall where the stage is set for today's outreach programme. Men and women, most in their 40s and above, come here for free medical screenings and education. There are about forty volunteers who ensure everything runs smoothly. I count about twelve doctors, including two orthopaedic surgeons, a cardiologist, a neurologist, and other doctors of every medical specialisation. Most work in big hospitals in Taipei, while some come from or have relatives in this region.

All are here today free of charge, to serve the community. The setup is a test lane with eighteen numbered stops. All residents can show their digital health card and once registered, can start with taking a blood sample, then urine, and stools. Other stops are for checking all organs and senses and limb function under the supervision of medical specialists. I witness a dentist treating a patient for damage done to teeth and gums due to betel nuts chewing. This intriguing addiction is endemic in Taiwan and almost unknown in the West. At stop number six, people who want to quit smoking are provided with Zyban pills, with follow-up support in the form of online coaching. Another stop informs about plant-based diet health benefits.

Monthly community outreach programmes aim for early detection or prevention of disease or dysfunction. It is also for people to become more conscious and capable of enhancing their own health, lifestyle, and climate footprint. This approach involves a considerable reduction in (national) medical costs and medical consumption and is beneficial to the community's health. The enthusiasm and commitment of the doctors and volunteers is infectious, and the atmosphere is one of friendliness and connectedness among all those present.

Dr Lin, again, plays a central role in the concept's architecture, coordination, and design. But he is too modest to admit that. Although the hospital acts as a 'hospital without walls,' its literal walls are extremely sturdy. They can handle a hurricane of up to seven on the Richter scale and surgeons inside can still continue medical operations. The thick, light grey structure of the building ensures the hospital's windows don't catch immediate sunlight, reducing heat inside and the reliance on the energy-consuming air conditioning.

The hospital lobby bathes in natural light that illuminates indoors through transparent ceilings and corridors between buildings. This decreases energy use during the daytime. Electricity use is further decreased by solar thermal systems placed on top of the building. For water heating systems, the traditional coal-fuelled boiler system is modified so that the heat pump produces hot water by absorbing heat from the surroundings, reducing almost one-fourth of the energy consumption.

The cool air produced by the system is incorporated into the air-conditioning system that can stop or start automatically, according to the set temperature and cold water, thus increasing energy efficiency. Next to energy consumption, recycling is in the DNA of hos-

Streets of Taipei



A Tzu Chi member cycling around the temple in Hualien



pital staff. This not only applies to the lifelong chopsticks everyone carries around but also to the entire outfit of the medical personnel. Most medical tools and instruments used for surgical operations are used repeatedly and recycled.

Doctors here say it is not necessary to discard or replace it after it has been used only once. Doctor Lin confirms there is no contamination problem and that the post-operative infection rate is lower than in most other medical centres. All the hospital rooms he shows me have a rainbow of different containers and bags intended to discard all the different medical waste. This is so that it can be properly recycled at the recycling station next to the hospital.

The person in charge of the green hospital programmes at Dalin Tzu Chi Hospital is Dr Lin himself. He is also Chairman of the Taskforce on Health Promoting Hospitals and the Environment. He has visited all recent UN Climate Change Conferences (COPs) and shared with international delegates worldwide about Tzu Chi's future-proof way of practising holistic green healthcare. He proudly walks me through 'The Heart Lotus Great Love Garden' full of wildflowers and indigenous plants that he and his wife helped to plant.

There is a huge sign that she designed that spells the word 'love' in all languages of the world. When I ask him what makes this hospital stand out from the rest, his answer is heartfelt. 'In this hospital, we do what we can, and of course, we focus on how technologies can help us reduce our climate footprint. But the climate crisis is also spiritual. It is about love and compassion!' He pauses, looks at me for a while, and continues: 'We believe the real magic comes from the software, not the hardware. I think I have to bring you to the heart of Tzu Chi. I will bring you to the Dharma Master.'

The following day, we board the Taiwan High-Speed Rail to Taipei in the North. The capital feels colourful, vibrant and energetic, like a Southeast Asian version of China's mainland cities. Dr Lin says people here appreciate freedom and democracy so much because they know what is at stake. For some time now, Beijing has frozen tourist permits for Taiwan. I almost don't see other Western tourists during my stay, probably because of media speculations about China's military threats to invade Taiwan.

For a country under military threat, the Taiwanese are surprisingly casual. Perhaps this is because they have lived with war threats for decades. Slurping on boba—the Taiwanese bubble tea with syrup and ice that is currently taking the world by storm—young Taiwanese in Taipei look to their eastern neighbour Japan for fashion trends. Hello Kitty and Little Konbini's—the Japanese convenience stores—are around every corner.

Taipei is as gender equal and LGBTQI-friendly as most Western European cities. It has a thriving art scene and feels like a place where the modern world and the old world shake hands. This is in the form of digital holograms on neon billboards next to century-old temples with (often) eccentric-looking gods with tiger bodies and dragon tails.

In this kaleidoscopic capital, Dr Lin obtained his MD and Masters Degree in Public Health and started his medical career in the 1980s. That was until he received shocking news, twenty years ago, that his father was suffering from an untreatable form of lung cancer. That was when Ming-Nan Lin took a drastic decision. He quit his well-paying job in the capital and together with his wife and newborn daughter travelled back to Tainan, his birth town in the southern part of Taiwan.

He wanted to take care of his family. Looking back, he says those last months with his father were very precious. When his terminally ill father passed away at 58, his mother was inconsolable. What gave her relief and strength was a group of Tzu Chi volunteers. Those elderly women had also lost dear ones and formed a circle of compassion and love around Dr Lin's mother. That sense of community and healing inspired her so much that she decided to officially join the group of Tzu Chi volunteers that give spiritual and material support to relatives during and after the final days of a loved one. It gave her life as a widow a renewed sense of spiritual purpose.

Climate change and biodiversity impact the world, but their environmental, social, economic, political, and health impacts have different faces depending on where you are born.



Cheng Yen

everyone to understand the deep underlying unity and interconnectedness of life through ecological mindfulness. This holistic worldview is humbling as it perceives that everything is part of the interconnected web of life. In that sense, fungi, oceans, or birds are just as sacred as humans.

This earth-centred worldview (instead of a human-centred worldview where humans rule over all other beings) corresponds with the way deep ecology and planetary health view the world. It is a necessary and urgent remedy to repair the broken relationship between people and the planet. Combined with Tzu Chi's unique Buddhism-in-action, it shows how spiritual and universal love and compassion for all living beings can be practically implemented in a hospital setting. Cheng Yen encourages doctors, farmers, the young, and the elderly to join the Tzu Chi organisation and follow Buddha's principles of love and compassion.

I meet many of these volunteers in the hospital. There is the cheerful 45-year-old mechanic who spends all his free time volunteering at the recycling station. There is also the 94-year-old lady with clear blue eyes who walks two kilometres back and forth to the hospital every day to comfort terminally ill cancer patients in their last days. Like Dr Lin, they all radiate a kind, wise, sense of spiritual purpose.

'Are you never cynical or frustrated about the climate crisis and the state of the world?' I ask him as we walk out of the temple. His answer: 'Master Cheng Yen would say: never lose courage, never lose faith. Nothing in this world is impossible with confidence, determination and perseverance. But the magic is in the action! So start small, start today and stay committed.' ●

From Taipei, we travel together to Tzu Chi headquarters in Hualien, a coastal town on the east coast of the island. Packed between the Pacific Ocean and the steep marble cliffs of Taroko National Park, lies the home of Master Cheng Yen, the Abode of Still Thoughts. We arrive at the grey temple surrounded by friendly nodding nuns with shaved heads, some on bicycles, who tend to the green medicinal gardens. Dr Lin tells me that despite her old age, Master Cheng Yen is still very enigmatic and convincing. 'She is a living example of the saying *be the change you envision for this world*. She never wastes a single drop of water and is kind, sharp, and humble.'

They had met the previous week to discuss how to help Turkey's earthquake victims. 'She decided to give 10,000 warm eco-blankets and 25 million dollars to 40,000 affected households. This money is from donations from ordinary people globally to our organisation. Master says she knows that people in the affected Turkish areas will spend it wisely and invest it in their local communities.'

Tzu Chi stresses investing in communities. Master Cheng Yen's vision of a holistic green and healthy hospital made the Tzu Chi Hospital in Dalin what it is today. It has uplifted the surrounding communities. Just as the Buddha did, Cheng Yen encourages

Tzu Chi headquarters in Hualien



Climate change and the biodiversity crisis are fuelling conflict and fragility



The state of health in fragile and conflict-affected regions is worsening. To build durable health systems in these areas, there is an urgent need to address the adverse effects of climate change and the biodiversity crisis, argues Eelco Jacobs. In this article, he explains why we need to weave planetary health into programmes and policies for strengthening health systems in these contexts.

Text: Eelco Jacobs

'War is the continuation of policy with other means.' This phrase gained new meaning when I heard about the fires ISIS intentionally lit on farmlands in 2019-2020. Sadly, scorched earth tactics and the crime of ecocide are nothing new. The environmental impact of the conflict in what was formerly known as the fertile crescent extends well beyond this burned cropland. And yet, while conflict exacerbates the effects of climate and biodiversity crises, these crises—at least indirectly—also drive dispute. In Syria and other areas in the Middle

East, Sahel, and the Horn of Africa, legitimate frustration with poor governance, the manipulation of ethnic and religious grievances, and geopolitical power games have been at the heart of recent conflicts. However, these conflicts are fuelled by intensifying droughts, soil degradation, and habitat loss due to climate change. In the civil wars in Syria and Iraq, the embers were lit by the most severe drought in nearly 900 years in the Eastern Mediterranean. This drought resulted in an extreme depletion of agricultural land, livestock, and water

sources, pushing people deeper into poverty and despair.

In addition to the effects climate change might have on sparking conflict, it is also important to admit that the commercial determinants of climate change, biodiversity loss, and conflict, go hand-in-hand. For example, commercial interests responding to the increasing appetite for meat and dairy worldwide leads to the destruction of the Amazonian rainforest, exacerbating the climate crisis. They also intensify the farmer-herder conflicts already raging

in the Sahel because of land pressures, droughts, and degrading soils.

Increasingly, cattle groups that have roamed the Sahel for generations are growing larger. They are flanked by four-wheel drive vehicles with heavily armed men, ploughing through the cultivated land of settled farmers, stoking further conflicts. The resources to beef up these herds come from what is termed 'neo-pastoralists'—wealthy, well-connected military and civil administration officials in Khartoum, N-Djamena, or Abuja. These neo-pastoralists look to invest their wealth in this growing livestock market in a setting where the rule of law does not apply and might make right. A perfect storm where state fragility crises meet climate change and rapid biodiversity loss.

Fragile and conflict-affected settings are highly complex and troubled contexts, unique in their way. They require well-tailored, context-specific approaches. Lacking effective central authorities, external donors, charities, and humanitarian agencies often work in fragmented ways. Each has its agenda, constituencies to report, and protocols. As a result, despite the best intentions, these efforts often fail to make a sustainable impact. They might even undermine the health system's resilience over the long run.

What further complicates the picture is that the international community and the national authorities, ruling approximately half of these territories, have a highly uneasy relationship. Understandably, the international community cannot continue business as usual with governments if they have achieved or stayed in power through illegitimate means (a violent coup or electoral manipulation); engaged in gross human rights violations domestically and sometimes outside of their borders; or are so consumed by corruption that the state is in effect only a vehicle for predatory elite enrichment. Accordingly, this leaves few options to engage with the governments for sustainable strengthening of their institutions.

The climate crisis has and continues to intensify existing disasters in fragile settings. Given how fast things are evolving, the situation will get worse.

Therefore, these challenges call for more than just emergency or relief efforts when the next drought, flooding, or disease outbreak strikes in a low-resource, fragile setting. We need concerted, holistic action with a long-term agenda, drawing from the 'Planetary Health,' 'One Health,' 'Health in All Policies,' and 'Humanitarian-Development-Peace Nexus' agendas. It needs to be rooted in an appropriate understanding of local contexts and systems in equitable partnerships with the drivers of change at the local level.

In doing so, we should be careful not to legitimise abusive power relations but to work smartly to address inequities in the long term. If national governments are implicated in severe human rights abuses, or are otherwise unwilling to work in the common interest or public health, the international community needs to look local and actively engage with non-state actors. This means joining forces with citizens, non-governmental organisations, businesses, and local decision-makers. Those willing to make essential services more resilient, accessible, and responsive—but often neglected and work in highly challenging circumstances.

However, seeking out non-state and local collaborators should not be an excuse for establishing parallel systems or the complete bypass of the government. On the contrary, it means strengthening governance structures from the bottom up. This could be through tapping into local initiatives, capacity, and systems that already work for people, and supporting them towards more equitable and inclusive processes and outcomes.

It also means investing in local structures of collective action and inclusive, participatory platforms. Through these initiatives, people can participate in decision-making about essential services, peacefully resolve conflicts, and sustainably manage common pool resources, such as pastures, forests, and water systems. Furthermore, long-term engagement and capacity development are an integral part of this effort towards enhancing community resilience and adaptive local systems.

A holistic and integrated approach to complex crises is needed. Therefore, we

should start integrating humanitarian, development, and peacebuilding efforts. Doing so will lead to greater integral awareness of the political economy benefiting from the status quo. This will give rise to a more coherent approach, enhanced resource efficiency, improved sensitivity to the needs of marginalised groups and ultimately, a more durable impact.

We also need to move away from financing healthcare programmes with rigid budgets, towards financing that includes health facilities' needs and performance. It needs to be coupled with sufficient autonomy for healthcare staff to adapt to changing health and demographic needs. This includes health emergencies, fluctuating patient numbers, and strategically investing in ways to respond to them.

We might be unable to prevent new ecocidal crimes, biodiversity loss, and climate change entirely. But, as an international community, we can join forces with citizens, civil society organisations, businesses, and local decision-makers willing to make their essential services more resilient and responsive. Instead of stoking the embers of simmering conflict, we should hasten the green transition. We should raise the costs for those deliberately causing environmental and human destruction and recognise ecocide for what it is—an international crime.



Eelco Jacobs is a senior advisor and Chair of the new 'Centre for Health Systems Strengthening in Fragile and Conflict-Affected Settings' at KIT Royal Tropical Institute.

Activism makes a comeback in healthcare

Once upon a time, doctors actively interfered in the design of society. As a result, public health improved enormously. Today, the healthcare sector is gradually witnessing a remarkable resurgence of activism thanks in part to unprecedented global challenges like climate change.

Text: Marc van Dijk



Elena Alam, an aspiring specialist in the field of primary care, firmly believes that doctors should have a profound connection with the world. 'The patients you treat are not isolated entities. They are part of a larger world, facing health-related issues that extend beyond the confines of the consultation room. Take, for instance, climate change, which transcends these boundaries. As doctors, we witness its consequences firsthand.'

'Moreover, just like any other place in the world, the Netherlands isn't immune to the unequal distribution of suffering. The most affluent individuals have better means to protect themselves, insulating their homes and avoiding extreme heat. They even receive additional subsidies to further adapt their houses. On the other hand, economically disadvantaged individuals are already experiencing the harshest impacts, both physically and otherwise. Unless we bring about change, these disparities will only worsen.'

During her early years of medical studies in Leiden, Elena Alam (26) became involved in international activism. She joined IFMSA, the International Federation of Medical Students' Associations, which connects medical students in 130 countries. Later, she also joined Extinction Rebellion, the international protest movement known for activists occupying roads and glueing themselves to works of art. Alam won't participate in those methods herself, but she and other

'Unless we bring about change, these disparities will only worsen.'

concerned (future) healthcare professionals have contributed to healthcare representation at climate demonstrations. This includes creating specific protest signs and wearing medical clothing. 'So that we have a recognisable presence as a sector.'

Elena Alam's attitude is an exception in the medical world. Activism in healthcare is growing strongly again, after years of being dormant, especially among the younger generation. Efraim Hart, currently pursuing a PhD on this subject at Vrije Universiteit in Amsterdam, observes a clear growth, although there are no official figures on it in the Netherlands yet.

In his research, Efraim Hart explores activism in healthcare in the Netherlands. Hart: 'During the pandemic, doctors increasingly advocated for good and responsible behaviour from people and the need for vaccination. In that sense, Corona heightened a sense of public responsibility among medical staff. This was also observed in other countries.'

Activism in healthcare, according to Hart, involves a variety of issues, from justice issues to social inequality issues. 'Consider the reimbursement of interpreters in healthcare, which was abolished in 2012 due to political choices, particularly right-wing ones. This results in situations where doctors and patients struggle to understand each other. Is it 'too political' for a doctor to denounce this? It's a clear example of activism driven by the desire for justice, something most people would agree with.'

He believes that there is a notable difference when it comes to an



Elena Alam

issue like climate change, where individuals within the same department may hold conflicting views. Climate is currently the dominant theme within healthcare activism. 'The emphasis now is on climate change. Meaning, how this phenomenon threatens health in the present and the near future worldwide. Also, the impact that healthcare itself makes on the planet, thereby, reinforcing that threat itself. Both themes converge under the term *planetary health*.'

Being an activist can be risky for doctors and medical staff. Healthcare is meant to be apolitical, but expressing yourself, advocating for change, and inspiring others can come with significant risks. Researcher Efraim Hart: 'The pristine whiteness of medical attire in hospitals and treatment rooms, appears to dictate the extent to which doctors are permitted to express their political inclinations or advocate for specific social issues.'

'Sometimes it seems as if neutrality is a professional requirement. The primary focus of treatment is to rectify an individual's physical well-being. Taking a stance on social matters would seemingly hinder this objective. This belief can strongly prevail within certain departments or institutions. I have seen examples of activist care workers getting into trouble or even being suspended by their managers.'

Interestingly, Hart suggests that the care workers who face consequences due to their activism tend to achieve less as activists. 'It appears that being too vocal or dramatic in the medical field is counterproductive. Healthcare professionals with radical views who constantly repeat them do not endear themselves. Successful activists, on the other hand, strike a balance.'

'They denounce the system and make strong statements, but at the same time, they work within the system to find solutions and improvements. These agile activists balance on the edge. They denounce the system while striving to make a difference from within, and rally others to join them in their desired direction.' According to Hart, acquiring specific knowledge and skills is crucial in this regard, which doctors, based on their training, may not naturally possess.

'To begin with, you have to see the bigger picture and develop an eye for it. However, today's doctors are largely focused on their specialised fields, delving into intricate medical details. Once a common observation that transcends individual patients is made, it requires a keen sense of when to draw attention to it. You also need to understand when exactly you need to collaborate smoothly. Knowing

when to publish information in the newspaper or when to employ quiet diplomacy is key to achieving effective outcomes.'

Those who are successful as activists, he argues, are changing the system from within the system. 'They are rocking the boat while staying on it. Wanda de Kanter, a Dutch lung specialist and activist against the tobacco industry, serves as a prime example. She is widely known for her work and has a strong media presence, in addition to being a respected lung specialist.'

Those who dismiss the connection between activism and healthcare, or view it as a passing trend, overlook a rich history that has benefited not only Western societies but also the rest of the world to some extent. Philosopher and former doctor Marli Huijer points to at least two centuries of tradition in which doctors actively spoke out about how we organise our living environment.

Marli Huijer: 'In his work on medical discipline, Michel Foucault reconstructs how doctors in the eighteenth century began to prioritise public health. They advocated for measures to improve survival rates for entire populations. In the Netherlands, this happened mainly from the nineteenth century onwards. They were pioneers in enforcing better sanitation, clean drinking water, healthy public housing, and the elimination of child labour.'

Efraim Hart



'They also contributed to the establishment of health insurance funds, where people could share their costs—the basis of solidarity between rich and poor, sick and healthy, on which our healthcare system is still based. They also focused on preventing infant mortality, providing education on healthy nutrition, and addressing infectious diseases. Additionally, they recognised the importance of education in improving overall health.'

According to Huijer, This social component of medicine had particularly beneficial effects on public health. 'Thanks to the medical impact on politics and society, average life expectancy has risen from under fifty in 1900 to over eighty years today.' Physician activism ceased sometime in the mid-twentieth century. The quality of food, housing, and society greatly improved after World War II, leaving little room for collective change.

'Perhaps it would be more beneficial to invest the money in creating a healthy living environment.'

Huijer: 'Yet, it is still the case that the social environment is decisive for lifestyle and health. Johan Mackenbach, an emeritus professor of social health care, emphasised this in his books, but his message was not widely heeded. Instead, curative healthcare became dominant, focusing on individual patients and neglecting the broader context. Medical innovation now primarily revolves around more successful surgeries, life-saving treatments, and new drugs and techniques.'

Would she want to abandon the individual approach? Don't we all seek the best, personalised treatment when we need to see a doctor? 'Don't get me wrong. Individualised care is wonderful, but it shouldn't be the sole focus. Doctors and physicians should also have a broader, more comprehensive perspective. How does this patient fit into the bigger picture? Are these complaints isolated? How can I represent the patient's interests?'

And, if needed, bring attention to the board, local, or national politics to address not only their illness, but also the underlying causes of this syndrome? With the increasing number of obese children seeking medical help, doctors must advocate for stricter regulations on the food industry and living environments. Yet strangely, we shy away from that. As if that would be a gross violation of free trade when that so-called freedom is at the expense of our children.'

She not only speaks as a philosopher, but also from personal experience having begun her career as a doctor. During the early 1980s, she engaged in various activities, including her work at Junkiebond in Amsterdam. 'That was super-activism. As doctors, we passionately advocated for the well-being of drug users. The rise of AIDS posed a significant challenge at the time, given its relatively recent emergence. Heroin addicts were at high risk of infection due to the use

of contaminated syringes. With the help of other organisations, we successfully exchanged the dirty syringes. On Friday afternoons, we arrived with hundreds of syringes.'

The addicts received clean syringes in exchange. The Medical Service Heroin Users, also known as the Junkie Union, also advocated for general practitioners to provide substitute methadone. This medication alleviates withdrawal symptoms, without the intoxication and significant pollution risks associated with heroin. It enables users to regain control of their lives and seek rehabilitation. Huijer explains, 'To accomplish this, we consistently lobbied the alderman at City Hall for funding, authorisation, and resources.'

In this modern era, she argues, although our goals may have changed, the same attitude is still required. 'Simply focusing on individual patients is no longer sufficient. In a world where we are more interconnected than ever, where the pandemic has resurfaced and climate change threatens all of us, we cannot solely consider the physical well-being of each patient. If we fail to take into account the bigger picture, where the food industry collectively contributes to obesity and governments hesitate to transition towards a more balanced way of life in harmony with the planet, we will only be treating symptoms without addressing the underlying causes.'

However, she asserts that the trend is the opposite. 'Not only is prevention becoming more individualised, but treatments as well, thanks in part to genetic diagnostics. Instead of a broad medicine that provides some benefit to everyone, highly specialised and costly drugs are being developed that are tailored to an individual's DNA. However, it is important to remember that the cost of personalised medicine far exceeds that of generic medicine. Perhaps it would be more beneficial to invest the money in creating a healthy living environment.'

Why should that be? 'The healthcare sector is a significant polluter, responsible for up to seven percent of national CO₂ emissions. It's crucial to reflect on making it more sustainable. There is a substantial waste of material and energy in healthcare. Additionally, climate change and our health are closely connected.'

In the past, doctors globally campaigned against nuclear armament and achieved success. Now, they are directing their efforts towards addressing climate change, by promoting sustainability and advocating for comprehensive climate policies. Recently, young doctor Elena Alam represented the Netherlands at an international World Health Organisation meeting. She delivered a talk on the impact of climate change on health. 'As a doctor, I want to leave a world where people can lead healthy lives.'

According to her, every doctor and medical sector employee can contribute to the necessary change from their perspective. 'Since my first internships and cosmesis, I've been surprised by how materials are handled. Scissors are often discarded after one use because disinfecting and reusing them is costlier than simply disposing of them. This kind of wastefulness is especially noticeable to newcomers. While you may not be able to change it alone, starting a conversation and finding supporters can raise awareness. Many hospitals have *green teams* where employees collaborate to identify sustainability opportunities.'

It can be about wasteful elements in procedures, both small and large, including taboo topics like overtreatment. Marli Huijer: 'Over-treatment remains a growing issue. Specialists strive to do everything possible to improve people's health. Yet, they should frequently question the necessity of treatment. Performing fewer



Marli Huijer

medical procedures in the Netherlands could lead to significant sustainability gains.'

According to activist researcher Efraim Hart, it's possible to prioritise these issues by finding the right tone and form of action. 'It's important to find supporters, otherwise, it can feel like speaking out in a sea of silence. You get applause for your presentation on sustainability, but in reality, nothing changes. You have to avoid that by making the right connections. To alleviate the pressure faced by courageous individuals, activist skills should be incorporated into the training of all medical professionals. These skills are necessary for identifying issues and effectively advocating for policy change.'

Marli Huijer: 'As a doctor, or in my case former doctor, it's impossible not to be concerned about the impact of climate change on people's health. Precision medicine is ineffective in addressing these concerns. Let's remember to think and act collectively. Doctors are not engaging in politics when they recognise the collective issues behind individual pathologies. They should highlight to the public and politicians the importance of addressing health problems at their root, rather than just treating symptoms in individuals.' ●

Turkana's Clear Gold

Text: Rael Lomoti
Images: Moses Mbotela

Rael Lomoti stands as a beacon of hope in a dire situation. This social worker and founder of the first girls' football team in Turkana embodies resilience and determination. Through her eyes, we see not only climate change's devastating effects but also the human spirit's resilience. Her story serves as a stark reminder that climate change isn't a distant threat; it is today's reality, etched into Turkana's people.

My name is Rael Lomoti. I am a young mother from Turkana County in North Western Kenya. Here, climate change has significantly affected us, resulting in a complete change in weather patterns. Due to this, our rivers have dried up, and the depletion of groundwater reserves has made it difficult to access clean water. For instance, yesterday I was unable to get clean water for my 4-year-old daughter. As a result, she had to drink contaminated water at school, which caused her to fall ill. I have just returned from the hospital where she was diagnosed with Typhoid. Water is becoming more expensive due to scarcity.

A 20-litre water jerrican, including motorbike transport, costs 1050 shillings (USD 7). Alternatively, you can trek. Turkana has no water to bathe, drink, or wash your clothes; it is a luxury. My community has struggled for decades with water scarcity. When water is scarce, we often resort to whatever sources are available, even if they are contaminated. Usually, it is salty and unfit for drinking. As it is the only one most families have, there is no option but to use it for drinking and other household activities such as cooking.

There have been severe health issues such as irritation, rashes, and severe diarrhoea, particularly in children. There are also vector-borne diseases, such as infectious diarrhoea from water, which can cause chronic respiratory conditions. This water is usually obtained from open holes dug by women along seasonal rivers such as the River Kawalase. Since getting this unhealthy

water is free, most people here and in other parts of Turkana are opting for that option because clean water is very expensive. As we speak, our health centres are flooded, with my daughter adding to the list of patients.

In Turkana, climate change is not only affecting water scarcity, but also food production. Due to the lack of rainfall, many livestock have died. We have communities you visit and all you will see are livestock carcasses. This has led some of us to depend on food aid due to hunger, which has affected our kids severely, leading to malnutrition.

Unfortunately, all food supplies in Turkana are from other counties, making it very expensive. The nutrition situation is at a critical level, with a Global Acute Malnutrition (GAM) level among infants and young children falling in the range of 15.0-29.9 percent. It is a problem too severe to ignore. Being a young parent, I often ask myself why Turkana is so poor that even providing clean water for its residents is a problem.

My ancestors knew nothing about climate change, yet experts are calling it the biggest health threat facing humanity, especially in northern Kenya. It's not just the experts who say so; we experience it in our daily lives.

Rael Lomoti (28) is a social worker and founder of Desert Roses, the first girls' football team in Turkana.





Planetary Health: Transdisciplinary cross-pollination

Planetary Health's vision prioritises looking beyond scientific doors, halls, universities, and borders. Researchers must dare to embrace novel perspectives and ideas, even if they are not based on Western principles. They must work 'transdisciplinary'. Transdisciplinarity involves different populations and professional groups in finding solutions to societal problems. In this article, we talk to two 'cross-boundary' experts about how the health sector can work in a transdisciplinary way. We also discuss what is needed, and what insights can be shared based on their work.

Text: Ellen Mangnus

Ten years ago, the WHO predicted the eradication of malaria by 2030. Unfortunately, climate change is throwing a spanner in the works. The mosquito with the pathogen is now spreading rapidly in areas where it was previously cold, such as Africa's highlands and even Southern Europe. Global warming causes human discomfort on many fronts. For example, in 2022, at least fifteen thousand Europeans died from heat waves. According to UNICEF, 27.7 million children were affected by devastating floods that led to malnutrition and infectious diseases.

Earlier this year, researchers published the results of their research into the relationship between extreme weather conditions, and mental complaints in the scientific journal *Psychological Medicine*. It concluded that such circumstances cause an increase in complaints of post-traumatic stress disorder. Climate change shows humans are part of a large and complex whole.

We live in what geologists call the Anthropocene, the era in which humans influence Earth's processes. The consequences—warming, droughts, and floods—show he is not the most effective helmsman. He is responsible for all the repercussions. The increasing number

'There are many systems, not just healthcare, reaching their limits and needing restructuring to address current problems.'



Jacqueline Broerse

of infectious diseases, the growing number of deaths due to heat and floods, and the food shortages due to drought and declining biodiversity are direct threats to his health.

That notion is at the core of the concept of 'Planetary Health.' This area of research, education, and practice focuses on the relationship between global environmental changes and human health. If human health depends on planet health, we need to better understand these complicated relationships. That is the starting point. It requires a different way of researching; Planetary Health researchers say. A disciplinary approach will not suffice.

To really understand the relationship between health and climate, scientists need to knock on each other's doors much more—not only within the same building but also across disciplines and national borders. Not only that, they have to get out of their laboratories and academic towers into the real world to embrace other ideas, learn from other forms of knowledge, and collaborate with different groups in society. It is called transdisciplinary research. This way, researchers find solutions to complex problems.

But how do we work transdisciplinary? What does it require?

We discuss it with two 'boundary-crossing' experts. What insights can they share based on their work? Corinne Lamain is the Director of the Center for Unusual Collaborations. It is an alliance between Technical University Eindhoven, Wageningen University and Research, Utrecht University, and University Medical Center Utrecht, that focuses on stimulating unusual collaborations in research. She explains what transdisciplinary research entails. 'It involves a partnership between researchers from different disciplines and parties from diverse social (work) fields. The solutions sought together are based on different forms of knowledge, not just scientific.'

It is about a collaboration between science and society. Jacqueline Broerse, Professor of Innovation and Communication in the health and life sciences, adds that such collaborations can also be initiated by society. In all cases, transdisciplinary cooperation means that the participants acknowledge that there are more forms of knowledge besides scientific knowledge; knowledge collected systematically. You can think of experiential or professional knowledge, but even personal perspectives are relevant to knowledge production. The core is that novel insights develop together, also called co-creation.

Lamain believes that interdisciplinary research—collaboration between scientists from different disciplines—is insufficient to address major social issues. 'We will not succeed by simply providing scientific knowledge. To find out how and which buttons we should

push in society, we need transdisciplinary research: research that also involves knowledge from outside science. Interdisciplinarity is already a significant step towards making research broader and more relevant to social issues. It is the only way to ensure research contributes to societal change.'

Broerse predicts that the need for transdisciplinary will increase. 'There are many systems, not just healthcare, reaching their limits and needing restructuring to address current problems.' According to her, these major issues cannot be effectively addressed by research, without societal parties. 'They often have a better view of bottlenecks and what is and is not likely to succeed.'

She says transdisciplinary research is 30-40 years old. In the late 1980s, she joined the VU Biology and Society department. That department aimed to integrate social aspects into the Beta course programmes. 'It was the time biotechnology emerged and came with enormous claims. All kinds of possible solutions would be solved, including in developing countries. We then asked: what has the Green Revolution brought to small-scale farmers? How would biotechnology solve their problems? Every research agenda is determined by the actors who have access to the agenda.'

'When we looked at who participated in agricultural research in developing countries, we concluded that they were only large-scale farmers. This means many were not heard because small-scale farmers face completely different problems. What did they encounter? What did they think needed investigation? We didn't know that,' she says. The pressure to broaden research was also due to several critical reports published in the Netherlands at that time about the role of science.

The feeling was that companies had too much influence on the research agenda, and science needed to be democratised. It was the time the science shop was born, with every university opening one.



Corinne Lamain

Civil Society Organisations (CSOs) and neighbourhood committees could approach 'experts' with questions. 'Transdisciplinary work includes public-private partnerships and collaborations between scientists and the business community. But it can extend much further than that. I am thinking of involving other parties such as public organisations, civil societies, activists, and citizens' councils,' Lamain says. 'Such collaborations do not happen automatically. 'It is striking that enormous amounts of money are increasingly spent on transdisciplinary research. However, there is little or no guidance and support on how to collaborate. This means there is a high risk that teams will fall back into multidisciplinary: all members do their work without knowledge integration. That can still produce worthwhile research, but it does not meet the promise of transdisciplinarity that transformation can achieve.'

'They also call this 'embodied knowledge,' which can only be accessed if you do things collaboratively'

Working transdisciplinary requires proper preparation and organization explains Lamain. 'First, the various parties must agree on the theme they will work on together. Identifying the problem and its causes is the first step. It doesn't start with a question but with a topic or experience that isn't right. And then, what do we think is needed to solve it?'

One of the next steps in such a transdisciplinarity process is to find out whether you are asking the relevant question, Broerse also says. In her dissertation (1998), she developed a method for drawing up a research agenda with societal actors, through a participatory needs assessment. You use conventional qualitative methods, interviews, and focus groups. You also organise workshops in which people participate in a method of setting priorities. Who is at the table? Who will join in the discussion? What about diversity? How do you ensure that everyone makes their voice heard? What types of methodologies are appropriate?

Broerse says transdisciplinary work has two 'schools.' The first school believes the process should be outlined in procedures and guidelines, with principles such as accountability, transparency, and representation. These principles must be justified during and after the collaborative process. The other school believes that this takes some power out of transdisciplinarity. It is argued that you should keep the process much more open and flexible in order to respond to changes. She belongs to the first school.

Effective agreements benefit the process, she argues. 'You make choices—you have no choice but to choose. You cannot include

everyone or do everything. You are bound by resources. So, to keep people on board, you also have to be accountable for your choices. You must explain why you do or do not do something.' That does not mean you have to determine everything in advance. In transdisciplinary research, the design is emergent and iterative; you build through shorter learning cycles. You sit together all the time.

The purpose is to facilitate transformation and gain insight into other ways that can contribute towards addressing the problem. Transdisciplinarity means arriving at new insights based on a wide range of perspectives. Lamain says this requires a different, or more extensive, set of skills than what students and researchers are currently taught. 'Scientists are now trained to position themselves, defend their positions, and present convincing stories. However, transdisciplinary work also requires modesty and the ability to listen to others and arrive at a research question together.'

'The biggest challenge is what is called 'epistemic justice.' How do you do justice to different types of knowledge? How do you put the scientist with tables full of 'concrete' data, on an equal footing with the farmer who mainly has 'tacit' knowledge, built up through years of experience?' Lamain sees it as a fundamental condition for transdisciplinary work: participants must let go of the idea that their perspective is more relevant than others. 'I trust that your method/worldview/starting position has just as much to contribute to our shared goal as mine does' should be the attitude.

What kind of skills are needed for that? According to Lamain, it requires training. 'Do a lot of listening exercises because that is what it is about; listening.' She has trained in several courses with participants. They must then practice listening intently to the other person for two minutes without formulating an answer in mind. Time and again, people conclude that it is pleasant to be listened to.

If you have many different people at the table, it is impossible to arrive at one vision because value orientations differ too much. Broerse talks about a project where everyone wanted the same thing at first glance: sustainability and less CO₂. 'But when it came to how it could be achieved, opinions differed. One group did not want the use of high-tech, while the other group said the goal was unachievable without it.' She continues: 'There is always conflict when it comes to sustainable food: local versus global. What are we talking about then? Far is sometimes more sustainable; CO₂ emissions from production methods are often more impactful than from transport.'

How do you resolve such deadlocks? Broerse says methods exist for this. 'You can arrive at different future scenarios through a typology of value orientations. Because it is faith-based, in many cases, there is simply a lack of knowledge. Acceptance of the plurality is crucial, meaning multiple sustainability visions can coexist. You will do this through all kinds of experiments, and it is imperative that scientists are not the initiators, because then you will get nowhere.'

'It is also important not to do this solely based on verbal agreements: Acting and talking are not always congruent. To really gain insight, you have to work together and do things as a team. Additionally, tacit knowledge emerges that people cannot share at all. There is a lot of knowledge people cannot put into words. Knowledge is present in your body,' says Broerse. 'They also call this 'embodied knowledge,' which can only be accessed if you do things collaboratively: it is about more than co-design and co-creation. To draw from this form of knowledge, you have to work together.' ●

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The European Global Health event of the year!

WHAT?

The European Congress on Global Health, also known as ECTMIH2023, will focus on planetary health, which reflects the interconnectedness of human health and climate change in a rapidly changing environment.

WHEN?

20-23 November

WHERE?

Tivoli Vredenburg
Utrecht,
The Netherlands

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