

FESTMIH-NEWSLETTER

2024 Q4



WHAT TO EXPECT

January 30

International Day of
Neglected Tropical Diseases

February 11

International Day of Women
and Girls in Science

February 21

International Mother
Language Day

March 20

International Day of
Happiness

March 22

World Water Day

Welcome to our theme-driven newsletter, which is aligned with the **International Days** of the United Nations.

We would like to draw your attention to the **innovative feature** of this newsletter: the inclusion of topics such as the International Days of the **upcoming quarter**. We hope that this will inspire ideas for ways of increasing **awareness** of these events, whether through the creation of content here or the **organisation** of events in your **own community**.

In the following articles, you will have the opportunity to expand your knowledge in the fields of **research, medicine, and equal** opportunities. We place a special emphasis on the challenges and progress that have emerged on the path toward a more equitable and inclusive scientific and medical community.

This first issue not only aims to raise awareness of global challenges but also to highlight the immense importance of **international collaboration**. The topics we cover are not confined to individual countries or regions—they are of **global significance** and require the united efforts of scientists, medical professionals, and policymakers across the world.

In this edition, you'll find content focused on specific UN International Days, including International Day of **Women and Girls in Science**, International **Mother Language Day**, International **Day of Happiness** and **World Water Day**. Additionally, we shine a spotlight on our collaboration partners who contribute valuable insights and support to our newsletter.

We invite you to look beyond borders and explore with us the critical role that sharing knowledge, resources, and experiences plays. Only through close international networking and cooperation can we effectively address the complex issues of our time, such as **improving healthcare** and **promoting equal opportunities**.

We hope that this first issue of our newsletter provides you with an **enriching and inspiring read**. Let us work together to shape a world where medical and social justice become a reality.

Yours sincerely,

The FESTMIH Newsletter Team



For your convenience, please find below a brief **overview** of the International days. Should you be interested in **reading more** on the topic, you are welcome to **follow the link** (Click on the title) to the corresponding article.

International Day of Neglected Tropical Diseases

Neglected Tropical Diseases (NTDs) affect over a **billion people worldwide**, particularly in underserved regions. This article highlights **global and local efforts** to combat these diseases, including **youth-led initiatives** and community-based programs. Special focus is placed on advocacy campaigns and success stories from **international conferences**, emphasizing the **importance of collaboration** in achieving health equity. Inspiring examples from organizations like ALERT Hospital showcase how education, outreach, and partnerships are pivotal in the fight against NTDs.

International Mother Language Day

This article examines the **dominance of English** in science and its impact on **non-native researchers**. It explores **innovative solutions**, such as **AI-driven translation** tools and **multilingual platforms** like SciELO, which bridge linguistic gaps and **enhance accessibility**. Examples from crises like the Zika outbreak underscore the **importance of multilingual science** communication in serving diverse communities. The piece advocates for embracing linguistic diversity as a strength in global research and collaboration.

International Day of Women and Girls in Science

This feature celebrates trailblazing women scientists like Nobel laureate **Rita Levi-Montalcini** and examines the systemic barriers women face in STEM fields today. A highlight is the compelling **interview with five accomplished women scientists**, who share personal insights on navigating challenges such as gender biases, balancing family and career, and finding **mentorship**. Their stories illustrate the ongoing progress in gender equality while emphasizing the need for continued support, policy changes, and role models to inspire future generations. Together, these narratives provide a **roadmap** for fostering inclusivity and resilience in science.

International Day of Happiness

Bhutan's **Gross National Happiness (GNH)** framework serves as a model for holistic development. The article explores the four pillars of GNH—sustainable development, cultural preservation, environmental conservation, and good governance—and their practical applications. While highlighting Bhutan's unique approach to balancing modernization and tradition, the piece also critiques the challenges and limitations of GNH. It inspires readers to rethink metrics of success and consider well-being as a **cornerstone** of global development.

World Water Day

Clean water and sanitation are **essential for health and dignity**, yet **billions lack access** to these basic necessities. This article showcases innovative solutions by the **German Toilet Organization (GTO)**, such as their “**Toilets Making the Grade**” program, which improves school hygiene infrastructure and educates communities on sustainable sanitation practices. With examples ranging from biogas systems to composting toilets, the piece emphasizes the role of education and innovation in addressing the global water crisis and achieving sustainable development goals.

INTERNATIONAL DAY OF NEGLECTED TROPICAL DISEASES

Neglected Tropical Diseases (NTDs), a group of 21 diseases defined by the World Health Organisation (WHO), affect over **a billion people worldwide**, mostly the **poorest communities**. Affected populations usually have limited access to health facilities, and available treatment options are often inadequate. Despite their huge impact e.g. on quality of life and economy, the general knowledge on NTDs is sparse. Education on their prevention and treatment is pivotal to **achieve NTD elimination and eradication**.

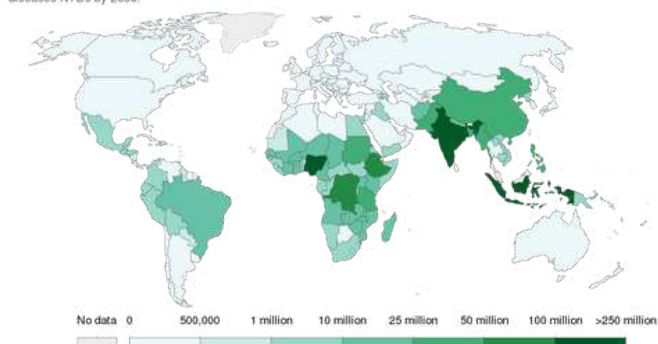
The WHO **NTD Road Map 2021-2030** emphasises the importance of Youth engagement for the fight against NTDs, underlining their “energy, values-based motivation and social connectedness in order to spread information, generate innovative solutions and change communal behaviours and norms in favour of national NTD programmes.”

Since its publication, NTD **Youth Initiatives** all over the world have formed. Their aim: To engage the **next generation** in tackling NTDs, with a variety of projects comprising health education, social media campaigns, reducing stigma around NTDs and many more.

Since NTDs are a global problem, more and more NTD **Youth Initiatives** are working together, aiming at forming an **international network**. For this year’s Conference on Tropical Medicine and Global Health (CTM) in Düsseldorf, several Initiatives came together to make a video on their actions: [NTD Youth Initiatives \(youtube.com\)](https://www.youtube.com/watch?v=15_09_2024).



Number of people requiring interventions against neglected tropical diseases (NTDs), 2015
Note: 15 NTDs identified by the WHO NTD Roadmap are: Buruli ulcer, Chagas disease, Dengue and Chikungunya, Dracunculiasis (guinea worm disease), Echinococcosis, Foodborne trematodiasis, Human African trypanosomiasis (sleeping sickness), Leishmaniasis, Leprosy (Hansen's disease), Lymphatic filariasis, Mycetoma, chromoblastomycosis and other deep mycoses, Onchocerciasis (river blindness), Rabies, Scabies, Schistosomiasis, Soil-transmitted helminthiasis, Snakebite envenoming, Taeniasis/Cysticercosis, Trachoma, Yaws.



Source: WHO, Global Health Observatory
Note: 15 NTDs identified by the WHO NTD Roadmap are: Buruli ulcer, Chagas disease, Dengue and Chikungunya, Dracunculiasis (guinea worm disease), Echinococcosis, Foodborne trematodiasis, Human African trypanosomiasis (sleeping sickness), Leishmaniasis, Leprosy (Hansen's disease), Lymphatic filariasis, Mycetoma, chromoblastomycosis and other deep mycoses, Onchocerciasis (river blindness), Rabies, Scabies, Schistosomiasis, Soil-transmitted helminthiasis, Snakebite envenoming, Taeniasis/Cysticercosis, Trachoma, Yaws.

The illustration highlights the **global distribution** of people requiring interventions for neglected tropical diseases (NTDs) in 2015. Heavily affected regions include parts of Africa, South and Southeast Asia, and Latin America. Darker shades of green indicate countries with higher case numbers, while lighter shades represent less-affected areas. This geographic distribution underscores the strong link between NTDs and poverty, emphasizing the **urgent need** for targeted efforts in the most impacted regions.

Showcasing Four Key Initiatives Across Africa, Asia, and Europe



Info-Box

| | |
|--------------------|---|
| Country: | Ethiopia |
| Founded in: | June 2024 |
| Members: | 10 members with a background in medicine |
| Aim: | Raising awareness for NTDs and educating communities |
| Email: | tsion@alertgursha.com , Tsiontesfa2020@gmail.com |
| Website: | www.alertgursha.com |

PARTICIPATION

Participation in Alert Gursha is open to anyone passionate about combating NTDs, including healthcare professionals, community leaders, volunteers, and advocates. Participants can engage through group discussions, collaborate on projects, and attend workshops and events.

PAST ACTIVITIES

Cultural Festival:

- Celebrated at ALERT Hospital, bringing together dermatology physicians and leprosy patients to foster a positive atmosphere and improve day-to-day experiences for patients.

Social Media Campaign:

- Raised awareness about the social stigma surrounding leprosy.

Community Outreach:

- Provided health screening and treatment for 300 children under the support of the organization One Child, including health education on menstrual hygiene and distributing 50 reusable menstrual hygiene pads for teenage girls.

PLANS FOR WORLD NTD DAY 2025

Social Media Campaign:

- Launch a campaign focused on educating the public about neglected tropical diseases in collaboration with the Ethiopian Medical Women's Association (EMeWA).

NTD Medical Student Contest:

- Host a contest for medical students as part of World NTD Day 2025.

OVERVIEW

Alert Gursha is a local nonprofit organization established at ALERT Hospital in Addis Ababa, Ethiopia, deeply rooted in Ethiopian culture.

The name reflects our mission:

"Alert" signifies our foundation,

while "Gursha" embodies the tradition of feeding someone

directly with your hands,

symbolizing respect and honor.

Together, Alert Gursha aims to create urgent awareness within our community for those affected by neglected tropical diseases (NTDs).

PLANNED FUTURE ACTIVITIES

Educational Videos:

- Conduct social media educational videos on leishmaniasis in the local language, in partnership with ALERT Hospital's social media platform.

Informative Brochures:

- Release brochures about leishmaniasis to educate the community.

Training Programs:

- Develop research and grant writing training to empower young medical doctors with the skills needed to advocate for NTDs.

Encouragement for Research:

- Motivate medical students to undertake more NTD research projects for their dissertations.





Showcasing Four Key Initiatives Across Africa, Asia, and Europe



WORKING GROUP FOR NTDS (AG NTD) OF THE “YOUNG DTG”

(GERMAN SOCIETY FOR TROPICAL MEDICINE, TRAVEL MEDICINE AND GLOBAL HEALTH, DTG)

PARTICIPATION

Participation is open to anyone who is interested in joining us in our efforts to combat NTDs. The only requirement is a membership in the DTG (possible online via [Deutsche Gesellschaft für Tropenmedizin und Globale Gesundheit e.V. \(dtg.org\)](http://Deutsche_Gesellschaft_für_Tropenmedizin_und_Globale_Gesundheit_e.V._(dtg.org))), and the “young DTG”.

| Info-Box | |
|--------------------|---|
| Country: | Germany |
| Founded in: | January 2024 |
| Members: | 22 members with a background in medicine, veterinary medicine, global health |
| Aim: | Raising awareness for NTDs, NTD policy/advocacy, promoting an (inter)national clinical, scientific & social exchange about NTDs among young people |
| Email: | ntds@dtg.org |
| Website: | https://www.dtg.org/ueber-die-dtg/ausschuesse/nachwuchsfoerderung.html |

OVERVIEW

The “AG NTD” was founded as a working group within the “young DTG” of the German Society for Tropical Medicine, Travel Society and Global Health (DTG). While our primary aim is to raise **awareness** for NTDs, we particularly want to build a **network of young people** interested in NTDs, and further (inter-)national cooperations. For this, we have already cooperated on projects with partners in Germany (such as jUNITE and the GTP) and internationally (e.g. the CNNTD and Japanese NTDs Youth Organization), and have organised an online meeting with international NTD Youth Initiatives, to **harmonise common activities**, and to start a networking platform to connect more easily.

PLANNED FUTURE ACTIVITIES

- Webinar on “NTD programs: Successes, challenges and future perspectives”
 - In cooperation with the ASTMH and FESTMIH, 01/2025 (details to be announced)
 - Establishing an “NTD Youth Ambassador Program”
- NTD-Session at ECTMIH 2025 in Hamburg

PAST ACTIVITIES

- Video on NTD Youth Initiatives on different continents:
 - [NTD Youth Initiatives \(youtube.com\)](https://www.youtube.com/watch?v=...) together with NTD Initiatives from Canada, Japan, Pakistan and UK
- Presentation on “NTD Youth Initiatives of the Global North”
 - at the Conference on Tropical Medicine and Global Health (CTM), September 2024 together with NTD Initiatives from Canada and Japan
- Interdisciplinary Webinar on Leishmaniasis (September 2024)
 - With jUNITE (German Network of young infection medicine)
- Webinar on “NTD Advocacy/Policy”
 - With FESTMIH and the Canadian Network for NTDs (CNNTD)

PLANNED FUTURE ACTIVITIES

- Launching the NTD Youth Ambassador Program
- Journal article on NTDs in cooperation with the German Society for Tropical Paediatrics and International Child Health (GTP)



Presentation on NTD Youth Initiatives of the Global North

Showcasing Four Key Initiatives Across Africa, Asia, and Europe



Info-Box

Country: Japan
Founded in: April 2023
Members: 7 members with a background in medicine and veterinary medicine (students & doctors)
Aim: Raising awareness for NTDs in Japan, foster partnerships globally, accelerate efforts to reduce the disease burden
Email: recruit@ntds-youth-japan.org
Website: <https://www.ntds-youth.org/>

PARTICIPATION

The NTDs Youth Organization welcomes anyone who considers themselves "youth" and is interested in controlling NTDs.

OVERVIEW

The NTDs Youth Organization was founded in Japan and now operates as a non-profit general incorporated association. Our mission is to raise awareness of NTDs in Japan, **foster partnerships globally**, and accelerate efforts to reduce the disease burden.

ACTIVITIES

ADVOCACY

To enhance Japan's contribution to combating NTDs, we have actively engaged with policymakers. We submitted some recommendations to the Japanese government, calling for expanded NTDs measures.

We also aim to share Japan's success in eradicating rabies, one of the NTDs, by providing an informative website to the global community.

Website Link: <https://rabies-history.jp/en/>

GLOBAL PARTNERSHIPS

We are strengthening our collaboration with global organizations involved in NTDs. In June 2023, we held a meeting with Dr. Socé Fall, head of the WHO NTDs department, and participated in the Global NTDs Programme Partner's Meeting.

In September 2023, we attended the NNN Conference in Tanzania. We joined a panel discussion composed of youth around the world involved in NTDs.

CONTEST FOR YOUTH

We hosted an NTDs presentation contest in conjunction with World NTD Day (January 30), which was open to Japanese students from high school to graduate level.

It was held in two categories: "Explaining NTDs in Your Own Words" and "Our Role in Addressing NTDs." A total of 79 participants entered and 60% of them learned about NTDs for the first time through this contest.



PLANS FOR WORLD NTD DAY 2025

Holding the 2nd NTDs presentation contest.



Showcasing Four Key Initiatives Across Africa, Asia, and Europe



Info-Box

| | |
|--------------------|--|
| Country: | Global |
| Founded in: | 2020 |
| Members: | over 1 200 Champions spread across 52 countries |
| Aim: | Advocacy, policy, training and supporting stakeholders, capacity building |
| Email: | champions@youthcombatingntds.org |
| Website: | https://www.youthcombatingntds.org/ |

PARTICIPATION

The participation information is available on our [website](#).



ACTIVITIES

In key NTDs **policy** documents such as the Kigali Declaration on NTDs and the WHO 2021-2030 Roadmap NTDs, we have led **youth consultations and lobbied** for the recognition and inclusion of young people as well as our role in eliminating NTDs.

We continue to carry the youth voice and deliver their messages on important NTDs advocacy platforms such as the WHO Partner's Meetings, Conference of the Parties (COP), NTD NGO Network Conference (NNN), Commonwealth Youth Forum, and SHAPE Africa, among others.

Today, the YCNTDs community consists of over **1200** Champions spread across **52 countries** and has been served by eight Advisory Board members. For our 2024-2025 advocacy period which commenced in September 2024, we recruited six **Youth Champions** from the African continent to be supported as they lead our demand generation and resource mobilization efforts to end NTDs in endemic countries. The six Champions come from Rwanda, Kenya, Tanzania, Nigeria, Sudan, and Zimbabwe. **For more information about our initiatives, you can view our profile [here](#).**

PLANNED FUTURE ACTIVITIES

Our Youth Champion in-country advocacy is briefed in at the beginning of each month.

OVERVIEW

Established in 2020, YCNTDs is a global youth-focused and -led initiative, designed to mainstream the participation of young people within the NTDs community across all its activities. Our work is centered around advocacy, training, and supporting stakeholders, including those affected by and those working to eliminate NTDs.

Furthermore, YCNTDs recognize that as the largest demographic in the world, young people are also the most at risk of being affected by NTDs. As a result, we believe young people represent a key constituent within the community - one that brings energy, innovative thinking, and talent to the fight against NTDs.

We have created **platforms** for young people to share their **experiences** and raise awareness about NTDs in groundbreaking convenings such as the first-ever Global Storytelling Competition on NTDs that we launched at our 2021 NTD Youth Festival.



How Can Youth Combat NTDs?

1. Use your knowledge and expertise

As young people gear up to be the largest population group in the global workforce, we have an opportunity to be intentional about where our expertise go.

2. Share your stories

YCNTDs argues that youths bring a uniquely powerful weapon into the intergenerational fight against NTDs- storytelling. This can be used to raise awareness and influence political shifts on NTDs and health systems strengthening.

3. Demand more

From your local and national leaders in government, from the private sector, from education institutions, and your peers.

4. Serve

We can use our youthful energy to serve with our time, our voices, and our ideas.



INTERNATIONAL DAY OF WOMEN AND GIRLS IN SCIENCE

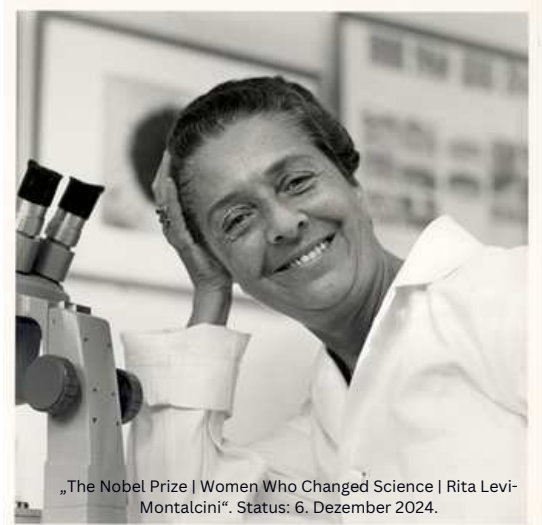
February 11

'The female is, as it were, a deformed male.' – Aristotle

This quote from Aristotle reflects a historical perspective that dominated much of Western thought, where even the greatest philosophers struggled to see beyond ingrained gender biases. However, it is important to remember that this view was not universal. Many societies throughout history, including those with **matriarchal** or **matrilineal** structures, recognized women in significant roles that differed greatly from the limitations imposed in the European context. Today, we view such **perspectives** as not only outdated but fundamentally flawed, acknowledging the diverse paths societies have taken toward equality. Recognizing this evolution is essential to understanding the progress made—and the work that still lies ahead—in the pursuit of **gender equality in science** and beyond. For millennia, women have navigated a world shaped and governed by men, molded to fit male ideals. The status of women throughout history has always been in flux and varies greatly around the world. Even today, **achieving true equality** is still a **challenge**, even in the Western world. Women have long had to fight for recognition, a recognition based on their abilities and accomplishments, rather than being automatically granted because of their gender.

Throughout history, remarkable women have shaped advancements across disciplines despite a world structured around male ideals. Their journeys, often fraught with obstacles, continue to inspire as we strive for a more **inclusive environment** in which **talent** and **contribution** are recognized **over gender**. One shining example of resilience and scientific brilliance is **Dr. Rita Levi-Montalcini**, a pioneering neurobiologist whose work forever altered our understanding of the nervous system.

Rita Levi-Montalcini (1909–2012) A Pioneer in Neurobiology



Rita Levi-Montalcini stands as one of Italy's most influential **neurobiologists**. Her groundbreaking discovery of the **Nerve Growth Factor** (NGF) offered new and groundbreaking possibilities to understand the mechanisms of nerve growth and communication, paving the way for treatments for various neurodegenerative diseases like Alzheimer's disease. Born in Turin, Italy, she did her medical studies at the University of Turin at a time when societal norms largely discouraged women from entering universities and especially the field of medicine and science. Yet, Levi-Montalcini's **passion for science** and medicine drove her toward neurobiology – a discipline she would profoundly shape.

Her journey, however, was anything but smooth. With the rise of fascism in Italy, Levi-Montalcini, who was Jewish, was dismissed from her academic post due to antisemitic laws, which prevented her from continuing her research in any formal setting. Refusing to give up, she set up a **makeshift laboratory in her own bedroom**, where her early experiments on nerve cells began. This modest environment would serve as the backdrop for some of neurobiology's most critical discoveries.

Following World War II, Levi-Montalcini relocated to the United States, joining Viktor Hamburger's research team at Washington University in St. Louis. There she performed experimental work on nerve cells, which led to the **groundbreaking discovery** of NGF. In collaboration with Stanley Cohen, she demonstrated that NGF plays a key role in the growth, survival and specialization of nerve cells. This discovery earned her and Cohen the **Nobel Prize in Physiology or Medicine** in 1986 and laid the foundation for future research into Alzheimer's, Parkinson's and other neurodegenerative diseases.



A LEGACY OF RESILIENCE AND INNOVATION

Rita Levi-Montalcini's groundbreaking work and lifelong dedication to science exemplify the power of resilience and the impact that women can have in fields traditionally dominated by men. Her journey, marked by perseverance in the face of social discrimination, has inspired countless women in science and continues to pave the way for future generations.

THE IMPACT OF NERVE GROWTH FACTOR

With her research on NGF, Levi-Montalcini not only unraveled the biochemical mechanisms of nerve cell growth, but also pioneered the field of neurotrophic factors - proteins that are vital for the development and maintenance of the nervous system. NGF was the first of these molecules to be identified, opening new paths of research into how the nervous system adapts, regenerates and responds to injury. Their work showed how a single molecule can fundamentally affect the function and survival of cells, changing the understanding of neuronal networks and plasticity.

CHAMPIONING EDUCATION AND EQUALITY

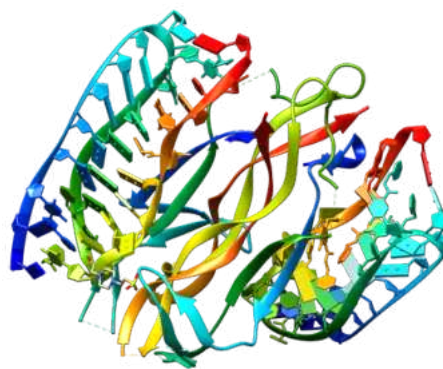
Levi-Montalcini's contributions extended beyond her scientific work. She was a passionate **advocate** for education, especially for women in developing regions. In 1992, she founded the **Rita Levi-Montalcini Foundation** to promote educational opportunities for African women, offering **scholarships** and **mentorships** to help young women achieve academic and professional success. Levi-Montalcini believed that societal progress was closely tied to intellectual empowerment and equality. Today, her foundation carries on her vision by **promoting education as a key to equality and opportunity**.

Be Part of the Next FESTMIH Newsletter!

Celebrate global health by contributing to our Q2 2025 Edition!

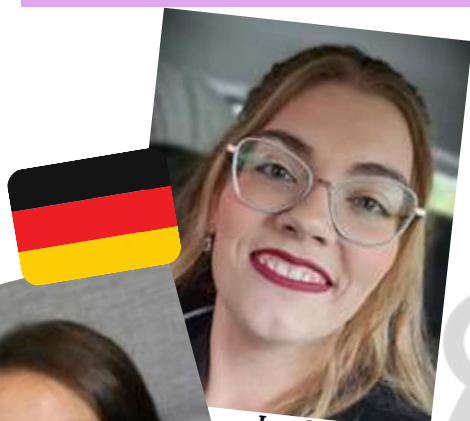
Choose a **UN Day topic** and send articles, project summaries, or inspiring stories to our **E-Mail**.

Deadline: 28.02.2024



WOMEN IN SCIENCE TODAY

Rita's story vividly illustrates the resilience and dedication required to succeed in science, especially as a **woman**. But Rita is far from alone—there are countless women scientists around the world who have faced similar challenges and are willing to share their **experiences** with us. In the following **interview**, some of them provide insights into their **personal journeys**, the struggles they've faced, and the successes they've achieved in a still male-dominated scientific world.



Ina Krüger (Master's Student, Saarland University Medical Center, Germany)



Dr. Jacqueline Rehner (Post-Doctoral Researcher, Saarland University Medical Center, Germany)



Dr. Lydia Nakiyingi (Senior Lecturer and Physician, Department of Medicine, Makerere College of Health Sciences, Uganda)



Dr. Farhana Rahman Luba (Research Physician, Bangladesh)



Paloma Cárcamo (Researcher, Yale University, USA)

We spoke with **five women scientists** at various stages of their careers and from **diverse backgrounds**.

Each of them shared their unique **experiences, challenges, and reflections** on the path toward **gender equality in science**. Their stories highlight both the progress made and the persistent obstacles that remain, echoing Rita Levi-Montalcini's spirit and reminding us of the work still needed to ensure a truly inclusive scientific community. Their stories highlight both the progress made and the persistent obstacles that remain, echoing Rita Levi-Montalcini's spirit and reminding us of the work still needed to ensure a truly inclusive scientific community.

ARE THERE SPECIFIC SITUATIONS WHERE YOU FELT YOU HAD TO PUT IN MORE EFFORT THAN YOUR MALE COLLEAGUES TO ACHIEVE THE SAME RECOGNITION OR POSITIONS?

INA KRÜGER



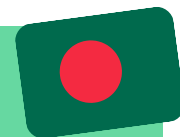
DR. JACQUELINE REHNER



"In fields like physics or computer science, the situation for women may be even more challenging. For example, when I started university, I noticed that 90% of our professors were male. However, I think **we're seeing a positive shift**—many of the new, younger professors are women. This is promising, although it might still take time for these changes to be fully visible, especially given that many current professors have been at universities for generations."

"I have encountered situations where I believe a **male** colleague would not have **faced the same condescending** comments from older men in high-ranking positions. These instances made me realize that acceptance from some people had to be 'earned' through proving my capabilities. The issue eventually resolved after our first joint publication, which seemed to shift their perception of my abilities."

DR. FARHANA RAHMAN LUBA



"Most certainly. For example, I was once interviewed for the position of Project Researcher. In addition to interview questions regarding my skills and experiences, I was also questioned about my marital status, whether I would be able to balance my **family responsibilities** and my career, and so on. I believe any male counterpart of mine would not have to face these questions. I had to take a firm stand for myself during the interview and convince them that I was just as capable. This was just one example amongst **countless others**. Even now, I have to put in twice as much effort to prove myself to my peers that I am just as capable as my male counterpart."

PALOMA CÁRCAMO



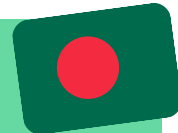
DR. LYDIA NAKIYINGI



"The first time I introduced myself as a physician and was immediately called miss by a patient, I was told it was because I looked **too young** to be a **doctor**. It was not. In the hospital, women were *las señoritas*, men were *los doctores*. It became an everyday occurrence, a part of life as a woman and a doctor. I had to **earn the respect** of every new patient I saw, while my male colleagues were respected by default. It was exhausting."

"Indeed, this happens most of the time. In the leadership positions that I hold, I feel that I have to work so hard and consistently prove myself to gain the **same level of trust** and credibility as my male counterparts. There is an **existing unconscious bias** and belief in the science field that high-level leadership roles should be undertaken by men. As such, I have to always outperform to gain authority. In addition, when there is a mistake made, people will often attribute the mistake more to the fact that I am a woman than other factors."

DR. FARHANA RAHMAN LUBA



"In our country, women are expected to take on the greater share of domestic and childcare responsibilities due to deeply ingrained cultural norms. That is why, most people believe that we women are **incapable of balancing a scientific career** and our family responsibilities. We are also perceived as more emotional and less rational, which undermines our capabilities. Sometimes, though it may seem silly, we are also thought to be 'less mathematical'."

INA KRÜGER



"While I haven't personally encountered specific biases, there are **societal expectations** that impact women in science. For instance, if a woman plans to have children, balancing that with a research career becomes significantly more challenging. Experiment schedules and the demands of lab work often don't align with childcare hours. Additionally, during pregnancy and breastfeeding, certain lab environments may not be safe for women, which further limits their research opportunities."

DR. JACQUELINE REHNER



"One of the biggest prejudices I've noticed is the **assumption** that we may **not be as capable as our male colleagues**. However, this really depends on the people you work with and cannot be generalized. Fortunately, in my immediate work environment, I have had the opportunity to work with people who see everyone equally, regardless of gender."

WHAT OBSTACLES OR PREJUDICES HAVE YOU ENCOUNTERED IN YOUR CAREER AS A WOMAN IN SCIENCE, AND HOW HAVE YOU DEALT WITH THEM?

PALOMA CÁRCAMO

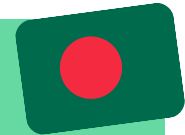


"One of the bigger obstacles that I still struggle with is how to present myself to be taken seriously by my colleagues. There are too many **preconceptions** and **prejudices** about what a 'professional' woman should be, and it is truly an impossible ideal. We are supposed to be serious, but not so serious to be perceived as angry. We are supposed to speak up and be assertive, but not enough that it feels pushy. We are supposed to look perfectly put together every day, but also not spend too much time on how we look, because we're supposed to be thinking about science! There is **no way to win**, and, in some ways, realizing this has helped me cope with these unrealistic expectations. These days, I just try to be myself, to do good science, and to not judge others."

DR. LYDIA NAKIYINGI



"As a woman scientist in this predominantly male-dominated science research, leadership, and academic environment, I have faced **several gender-based challenges**, which could easily have deterred my advancement in the science field. Among these have been; difficulties in **balancing research career** and **personal life** including motherhood; lack of mentorship focused to women; limited training opportunities offered to women; and societal attitude and beliefs towards women in science, academics and research. However, with determination, I was able to persevere and pursued my goal of becoming a woman in science."



"I've had both supportive and obstructive expectations from my family and society. I'd like to start on a positive note. My **family, relatives, and friends** are **proud** that I'm pursuing a scientific career. They provide me with all the **encouragement** and **emotional support** that I need. I have also had some female role models in my life who always inspire me and support my dream of contributing significantly to the field of science. I am who I am because of their constant support. On the other hand, there have been many times when I felt very demoralized by the negative stereotypes, limited opportunities, discriminations, and biases that I face in my family and my community. I try to focus on the positives more to keep myself motivated, but it is really difficult to do so sometimes."

TO WHAT EXTENT HAVE FAMILY OR SOCIETAL EXPECTATIONS PLAYED A ROLE IN YOUR CAREER PATH?

DR. JACQUELINE REHNER



"This has not really applied to my situation. I have **always** received **support from my family** and those around me, which has been incredibly encouraging."

DR. LYDIA NAKIYINGI



"In my culture and country as a whole, women are often expected to take on more home-related responsibilities than the men, including taking care of everyone in the family. **Women** are also expected to **participate** in **social events** such as burials, cultural functions, **religious and community activities** providing physical support during the activities. These family and social responsibilities have often conflicted with the demanding hours of my scientific career, and have **slowed my progress** and achievements. Achieving an efficient work-life balance has been very difficult and does not come without career penalties. Indeed, I have lost and missed out on many opportunities due to these extended responsibilities."

PALOMA CÁRCAMO



"I chose my career path because it is meaningful to me, and it **makes me happy!** I am privileged to have grown up in an extremely **supportive family** and to have found **mentors** that share my passion and encourage me to do what I love."

INA KRÜGER



"For me personally, societal or family expectations haven't had a negative impact. My **family** has **always encouraged** me to pursue whatever path I chose, and I'm grateful for their support."

The map shows the percentage **difference** between men and women in self-perceived **scientific knowledge**. The differences are represented using varying shades of red, with darker shades indicating larger gaps. The global average is highlighted in the center.

Where Do Women Underrate Their Science Capabilities?

% difference between genders in perceived knowledge of science (male-female)



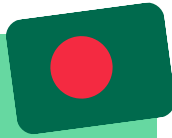
Note: Respondents were interviewed between April and December 2018 in 160 countries. All countries had at least 1,000 respondents, except Iceland which had 500. Source: Wellcome Global Monitor

INA KRÜGER



"I do see progress in Germany—newly appointed faculty members include more women, which shows there is some **momentum for change**. Still, there's room for improvement. For instance, students with specific research interests might have to relocate for their studies or PhD programs, which can be challenging if they already have a family. **Increasing support structures**, like more childcare facilities on campuses, would make a huge difference for parents, especially women."

DR. FARHANA RAHMAN LUBA



"Despite progress in gender equality in Bangladesh, women in science continue to **face significant challenges**. These include cultural norms, family responsibilities, limited mentorship, discrimination, and unequal access to resources. While awareness of gender disparities is growing, much work remains to achieve true equality in the field of science. To achieve gender equality in the field of science in my country, I believe more opportunities could be created by making **grants** and funding available **specifically for women** in science. It is necessary to implement policies that promote gender equality, raise awareness about gender bias, establish mentorship programs, create safe and **inclusive work environments**, and ensure equal access to resources for women scientists. By addressing these challenges, Bangladesh can foster a more equitable and inclusive environment for women in science, leading to innovation and progress."

DR. LYDIA NAKIYINGI



"In my country, there has been **significant progress** in attracting young women to study science disciplines through targeted initiatives and scholarships. At my institution specifically, they have introduced policies to **improve the work environment for women** and mentorship programs to support women. However, to achieve true equality in my country, the following ought to be done: Willpower is critical for women to take on sciences. Programs should work on instilling **confidence** in women about sciences at an **early age**. Programs should target girls in lower levels of school. The attitude towards women should change especially in societies where the field of sciences is still dominated by men. Women should be encouraged to participate in science-related disciplines and existing women scientists should be encouraged to take on leadership positions. When in influential positions, these women are likely to advocate, promote and put in place policies that support women. **Mentorship** is key in promoting women scientists. Senior women scientists should be utilized to mentor other women. Men should also come on board to promote women for sciences. Training opportunities specifically targeting women should be offered as a priority."

HOW DO YOU PERCEIVE THE DEVELOPMENT OF GENDER EQUALITY IN SCIENCE IN YOUR COUNTRY, AND WHAT WOULD NEED TO CHANGE TO ACHIEVE TRUE EQUALITY?



PALOMA CÁRCAMO

"There has been **tremendous progress**. My parents went to the same university I went to. Back then, they told me, there were only five women in their entire cohort. Twenty-something years later, more than **half of my class were women**. There are certainly more opportunities for us, and gender equality is recognized as a pressing matter. However, many of the **remaining challenges** are more insidious and **harder to address**. Women are now allowed in most spaces. That does not mean we are welcome or feel safe in them. I often hear stories, for instance, about physicians who were extremely passionate about surgery, but chose not to pursue it as a specialty because they did not want to deal with a work culture that can be toxic to women. **Women** are still **opting out of career choices**, not because they are not capable, but because they don't want **every day** to be an **uphill battle**. That is not true equality."

INA KRÜGER



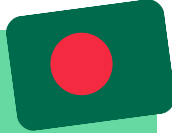
PALOMA CÁRCAMO



"To be honest, I **didn't have** many female role models. Most of my professors were male, and the few women I encountered didn't leave a strong impression on me. Even in media, it's only recently that I've seen more female scientists gaining visibility. There's a great astronaut on Instagram who has been somewhat of an inspiration to me—she's shown me what's possible to achieve, which is encouraging."

"I am incredibly lucky – I had a mentor right at home. My **mother** is a brilliant physician and public health researcher, and perhaps the most influential figure in my life. I've spent my entire life in **awe of all the lives she has changed**, not only through the impact of her research, but through her mentoring and uplifting of others in the Peruvian scientific community and beyond. One of the most important lessons I learned from her came after I had a disagreement with a colleague. I was sad and disappointed in myself, because I felt like I had burnt a bridge. 'You could live your life without falling out with anyone, Paloma', she told me. '**But that would mean you never stood up for what you believed in.**'"

DR. FARHANA RAHMAN LUBA



"I am glad that I got to be under the influence of some amazing **female mentors** in my life. My teacher Dr. Tawfima Islam is one of them. I was always mesmerized by the way she used to teach us, and I wanted to be like her when I grew up. She instilled in me the **dream** of becoming a scientist in my very early days, always supported me while I was pursuing this path, and more importantly, encouraged me to **dream big**. Her constant support gave me the strength to face all the challenges that come my way. Associate Scientist Dr. Kamrun N. Koly has also been a great mentor to me. She trained me to become a more **skilled professional**, and I will always be grateful for her mentorship."

DID YOU HAVE FEMALE ROLE MODELS IN YOUR SCIENTIFIC CAREER, AND IF SO, WHAT INFLUENCE DID THEY HAVE ON YOUR JOURNEY?

60% of women in STEM have been inspired by a role model

For women working in Tech, 64% were inspired by a role model



A recent study, commissioned by CWJobs, has shown that **role models** are **more important** for women than men, 60% of women working in STEM say that they have been inspired by a role model compared to 46% of men. For women working in tech, role models are even more important: 64% were inspired by a role model to pursue their career compared to 47% of men.

DR. LYDIA NAKIYINGI



"Yes indeed, there are **several** female scientists and leaders that I have always admired and these have been my role models. One particular female scientist at my institution has been very influential in my science career growth. When I joined her research team, she was more than just a boss, but also a mentor, **offering me the first opportunity to train** and advance my research and academic career. She was a **source of inspiration, encouragement and support**. She also proved to me that career success is actually possible despite challenges women face. She has been very vital in shaping my career and connecting me to opportunities."

WHAT ADVICE WOULD YOU GIVE TO YOUNG WOMEN PURSUING A CAREER IN SCIENCE WHO MIGHT FACE SIMILAR CHALLENGES?

INA KRÜGER



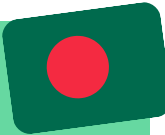
"My advice would be to study what truly interests you, regardless of whether there are more men or women in that field. Science requires a lot of **self-motivation**, so it's important to stay true to yourself and not change **to fit others' expectations**. Seek out like-minded people with whom you can share ideas and lean on when challenges arise."

DR. JACQUELINE REHNER



"Always **stand up for yourself** and never let anyone undermine your abilities. You know your strengths best, and if someone tries to belittle you or imply incompetence, don't hesitate to respond confidently. Often, people with such biases don't expect a young woman to assert herself. For your own peace of mind, try not to take **negative comments personally**; it's possible they're just frustrated by the quality of your work."

DR. FARHANA RAHMAN LUBA



"The first advice I would like to give is **finding a good mentor**. As Dr. Tawfima inspired me to pursue my dreams of becoming a scientist, I believe a good mentor can provide you with proper guidance, inspiration, and support. In addition, you have to **enhance your skills** and be open to learning the latest research and developments in the respective fields. Building a strong network with other scientists will open up new opportunities and provide you with a supportive environment when you need it. And last of all, you have to **believe in yourself**, your capabilities, and your determination. Firmly believing in your potential will help you to overcome the challenges that come your way and build a fulfilling and inspiring career in science."

PALOMA CÁRCAMO



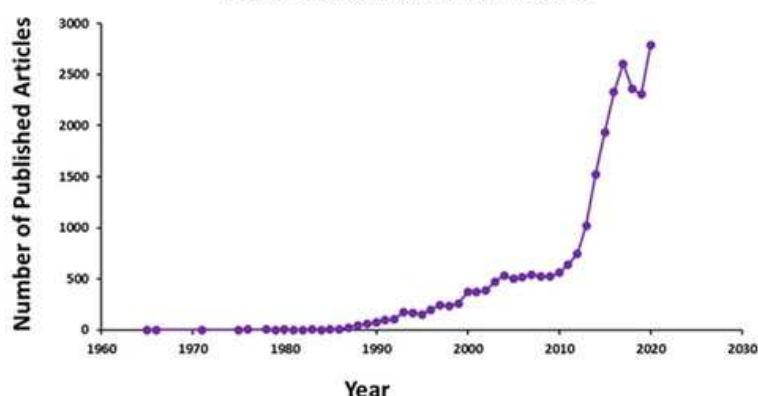
"Speak up, take up space, seize all the **opportunities**, and once a **door** has been opened for you, make sure you **leave it open so others** can follow your path. Build a **network** of people who share your values, your passions, and your fights. But most importantly, take care of yourself first!"

DR. LYDIA NAKIYINGI



"Young women should know that, pursuing a career in science, as a woman will inevitably come with **several gender-based challenges**. However, a career in science offers unique opportunities for recognition, impact, and career growth. I advise the young women to remain focused and pursue their passion, have **resilience and seek support**. They should try to find supportive **mentors** as these are key in offering advice, they will advocate for you, and help you navigate challenges. They should also look out for **programs** that support women in science growth and leadership. This was critical for me to get to where I am today."

Published articles on Women in Science



Number of articles regarding women in science published over time. Data source: PubMed

CONCLUSION

Reflections on Resilience: Women Navigating Challenges in Science



The **stories** of Jacqueline, Ina, Dr. Farhana Rahman Luba, Dr. Lydia Nakiyingi, and Paloma Cárcamo illustrate the **complex environment** in which **women in science operate**. Despite their diverse backgrounds and **cultural contexts**, each of these women highlights both the progress they have made and the ongoing obstacles women face in their scientific careers. They emphasize the importance of supportive **networks, mentorship, and policies** to promote equality. At the same time, their stories show how **deep-rooted societal norms** and expectations can create additional obstacles, particularly for those who must balance family obligations with demanding research roles.

A prominent theme in their advice is the call for resilience, **self-confidence**, and the necessity of building communities that uplift and empower women. For young women in science, this advice serves as both **encouragement** and guidance, showing that while the path may present unique challenges, success is possible through perseverance and support. In our collective pursuit of true equality, these voices remind us of the ongoing work required to create a more inclusive, equitable field where women can thrive and lead without constantly having to prove themselves.

Based on the real-life experiences of Jacqueline, Ina, Dr Luba, Dr Nakiyingi and Paloma, it is clear that the challenges faced by women in science are both deeply personal and rooted in **systemic structures**. To look at this issue from a broader perspective, the following **paper**, ‘The Gender Gap in Science: How Long Until Women Are Equally Represented?’ by Holman, Stuart-Fox and Hauser provides a broad, **data-driven analysis of gender inequalities in STEM fields**. By analysing more than 10 million academic publications across disciplines and countries, this study quantifies the extent of gender inequality and identifies the key areas where interventions are needed to close the gap. In doing so, we can **better understand** how **persistent biases** manifest themselves in publishing, career progression and leadership positions - ultimately emphasising the **importance** of targeted **reforms** to achieve **true equality in academia**.



MALALA YOUSAFZAI

I raise up my voice—not so I can shout, but so that those without a voice can be heard... We cannot all succeed when half of us are held back.

„THE GENDER GAP IN SCIENCE: HOW LONG UNTIL WOMEN ARE EQUALLY REPRESENTED?“

HOLMAN, LUKE, DEVI STUART-FOX & CINDY E.
HAUSER

BACKGROUND AND MOTIVATION

Despite increased efforts to address gender imbalances, women remain underrepresented in many areas of STEM, particularly at senior levels. This study sought to quantify the gender gap, identify fields unlikely to reach gender parity without targeted intervention, and reveal potential biases in academic publishing and hiring practices. By examining such a broad dataset, the study aims to understand where reforms are most needed to achieve true gender equity in STEM.

KEY FINDINGS

Persisting Gender Gaps Across Disciplines

One of the most striking findings is that the gender gap persists across nearly **all STEM disciplines**. Out of 115 fields examined, 87 have significantly fewer than 45% women authors, and only five have more than 55% women. Fields such as physics, computer science, mathematics, surgery, and chemistry were identified as having the fewest women authors, with physics, in particular, showing a mere 13% of last authors being women.

Conversely, **health-related disciplines** like nursing, midwifery, and palliative care have the highest representation of female authors, approaching or exceeding gender parity. However, this doesn't necessarily reflect equity across all aspects, as women in these fields are still underrepresented in more prestigious authorship positions.

The 'Leaky Pipeline' Phenomenon

The study reinforces the concept of a "**leaky pipeline**," a metaphor that likens a STEM career to a series of connected pipes through which women are more likely to exit at certain stages compared to men. Women are often well-represented as **early-career researchers** (first authors), but their **representation declines** significantly in **more senior roles**, evidenced by their underrepresentation as last or sole authors. This suggests that barriers and challenges become more pronounced as women progress through their careers.

Several factors contributing to this 'leaky pipeline' include:

- **Demographic inertia:** There were fewer women graduates in the past, meaning today's senior researchers are predominantly men.
- **Slower career progression:** Women face additional challenges both inside and outside the workplace, often progressing more slowly to senior positions.
- **Gender biases:** Women may be less likely to be offered or to request senior authorship positions.



„THE GENDER GAP IN SCIENCE: HOW LONG UNTIL WOMEN ARE EQUALLY REPRESENTED?“

HOLMAN, LUKE, DEVI STUART-FOX & CINDY E. HAUSER

KEY FINDINGS

Prestige and Seniority: Fewer Women in High-Impact Journals

Women are also significantly **underrepresented** in **prestigious journals**, such as Nature, Lancet, and the New England Journal of Medicine. The study found that women are more likely to be first authors than last authors in these journals, indicating that while women are entering STEM fields, they are less likely to achieve recognition in top-tier publications. This trend is particularly concerning as publication in **high-impact journals** is often crucial for career advancement, funding opportunities, and professional recognition.

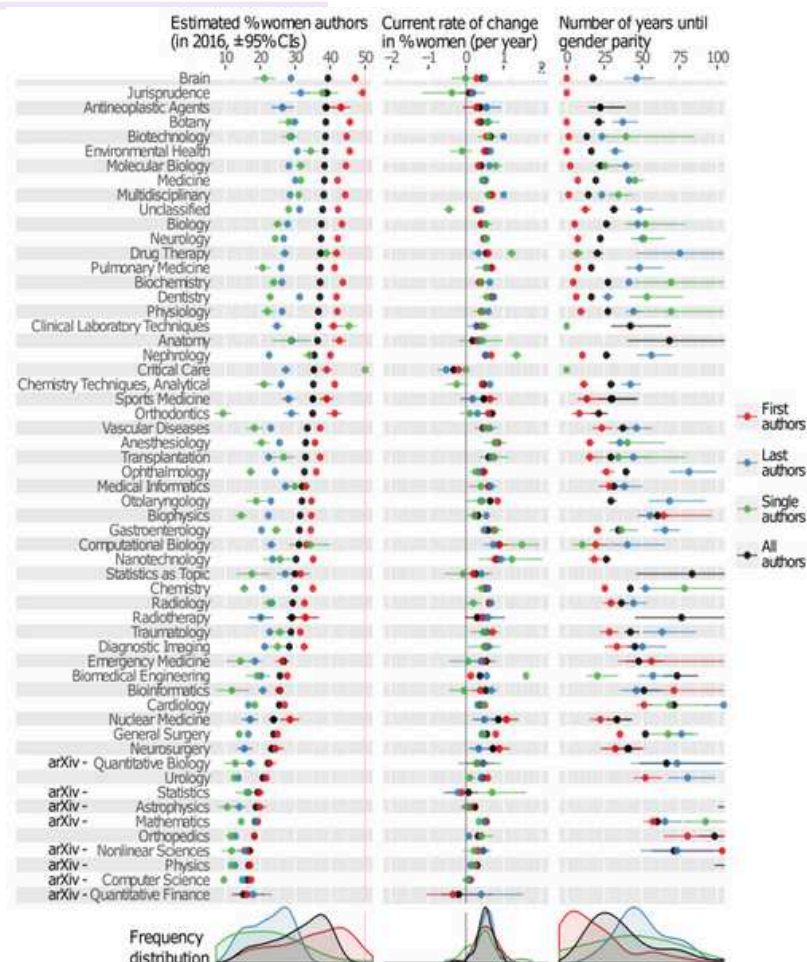
The authors further identified that men are **invited** to submit papers at approximately **twice the rate of women**. This discrepancy exacerbates the gender gap, as invited papers often hold more prestige and visibility.

Country-Specific Gender Gaps

The study's global scope allowed for an analysis of gender representation across more than **100 countries**. It found significant disparities, with Japan, Germany, and Switzerland identified as countries with some of the largest gender gaps in STEM fields. These **wealthy nations** had **fewer women authors** compared to less affluent countries, which suggests that economic prosperity does not necessarily correlate with gender equity in science. Interestingly, countries with **longer educational periods** for both genders showed a higher proportion of female authors, implying that **educational access** plays a critical role in addressing gender disparities.

The paper includes a key figure that effectively illustrates the gender gap and its progression over time across various scientific disciplines. This figure highlights fields like surgery, computer science, and physics, which show the slowest progress toward gender parity.

Description of the Figure: The Figure provides a comprehensive view of three key aspects related to gender representation across STEM disciplines:



„THE GENDER GAP IN SCIENCE: HOW LONG UNTIL WOMEN ARE EQUALLY REPRESENTED?“

HOLMAN, LUKE, DEVI STUART-FOX & CINDY E.
HAUSER

DESCRIPTION OF THE FIGURE

- 1. Current Gender Ratio (left panel):** This panel displays the estimated percentage of women authors in various research fields as of 2016. Each discipline is listed on the y-axis, while the x-axis shows the proportion of female authors. Different colors represent various authorship positions—such as first author, last author, and overall authorship. The error bars indicate the 95% confidence intervals.
- 2. Rate of Change per Year (middle panel):** This section illustrates how the gender ratio is evolving annually in each discipline. A positive rate suggests that the proportion of female authors is increasing, while a negative rate indicates a decline. This panel helps identify which fields are making faster progress toward gender parity.
- 3. Estimated Years to Reach Gender Parity (right panel):** The rightmost panel projects the number of years each discipline may require to achieve gender parity (within a 5% margin). The x-axis shows the estimated years, truncated at 100 years for clarity. Some fields do not have data here, indicating they may take more than 100 years to reach parity, or current data is insufficient to project accurately.

IMPLICATIONS OF THE FINDINGS

The authors conclude that while some progress has been made toward gender equity in STEM, many fields will not reach parity for generations without **deliberate intervention**. The disparity in invited submissions suggests that **systemic biases** exist within academic publishing. The **underrepresentation** of women in **prestigious journals limits** their visibility, affecting citation rates and career advancement. The **slower progression** of women into senior roles can perpetuate a cycle where fewer women serve as role models or mentors, further discouraging young women from pursuing long-term careers in STEM.

RECOMMENDATIONS FOR CHANGE

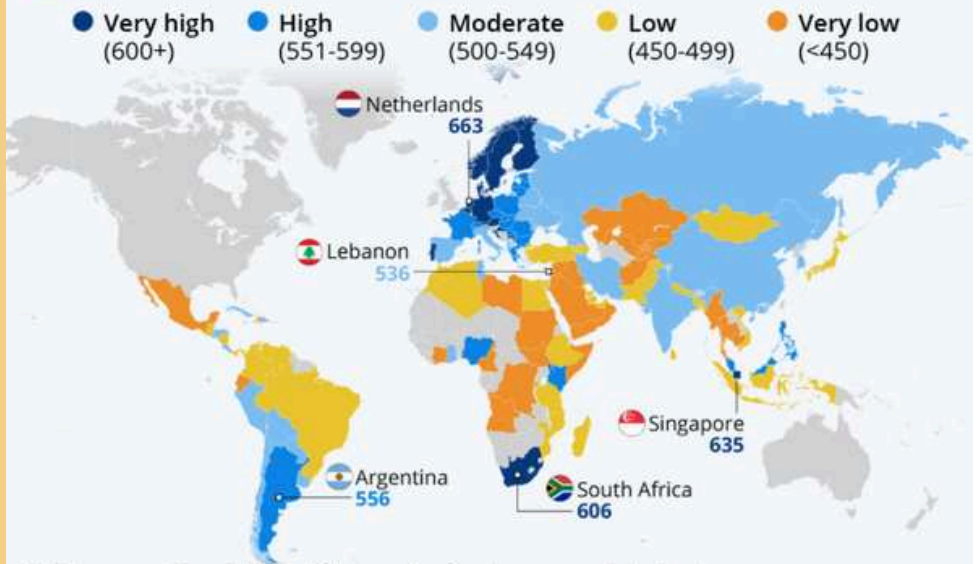
- 1. Double-blind peer review and editing processes to minimize gender bias in publishing.**
- 2. Mentorship programs to support women in progressing through their careers.**
- 3. Gender targets for editorial boards and conference invitations to ensure women have more opportunities for visibility and leadership.**
- 4. Better recognition of work-life balance challenges that disproportionately affect women, such as parental leave and caregiving responsibilities.**
- 5. Promoting female role models and leaders to inspire the next generation of women in STEM.**

INTERNATIONAL MOTHER LANGUAGE DAY

In the modern scientific world, **English** has become the **dominant language of communication, research, and publication**. Today, more than 90% of scientific articles are published in English, yet **fewer than 5%** of the world's population **speak English** as their **native** language (Lillis & Curry, 2010). This linguistic imbalance has brought both progress and significant challenges. While a shared scientific language has helped **unify global communication**, it also risks excluding researchers who are not fluent in English, creating **inequalities** in who gets heard, cited, and recognized.

English, The Global Language?

Worldwide English proficiency levels by nation in 2021 (in index points)*



* Only countries with English as a foreign language included. Based on EF SET tests of 2 million adults (aged 18+) across 112 countries. Source: EF English Proficiency Index 2021

The global **English proficiency map highlights** this disparity clearly. Countries such as the Netherlands (663) and Singapore (635) rank among the highest in English proficiency, alongside regions like Northern Europe and parts of South Africa, where English is widely integrated. Meanwhile, large parts of Central Africa, South America, and Central Asia show low to very low proficiency. This geographical divide in English fluency mirrors **global inequalities** in access to resources, **education, and opportunities**. For scientists from regions with lower proficiency, publishing and presenting research in English becomes an added challenge, one that reinforces systemic disadvantages.

Historically, scientific discoveries were shared across multiple languages, including German, French, Latin, and Italian. Up until the early 20th century, German was the predominant language in fields like chemistry and physics. However, the world wars and the economic isolation of German-speaking countries led to a shift. By the mid-20th century, with the United States emerging as the global leader in science and technology, **English began to fill the vacuum** left behind (Gordin, 2015). Major journals, conferences, and research funding organizations adopted English as the standard, solidifying its role as the global lingua franca of science.

INTERNATIONAL MOTHER LANGUAGE DAY

At first glance, this dominance appears beneficial. English has enabled faster, more efficient communication among researchers worldwide. In fields such as medicine, environmental science, and public health, the ability to **disseminate research findings quickly** can be life-saving. Scientific journals with global reach allow discoveries to be shared across borders, sparking collaboration and innovation. For native English-speaking scientists, this system is an undeniable advantage. Writing, publishing, and presenting in their own language removes barriers and allows their work to be more visible and easily cited (Van Weijen, 2012).

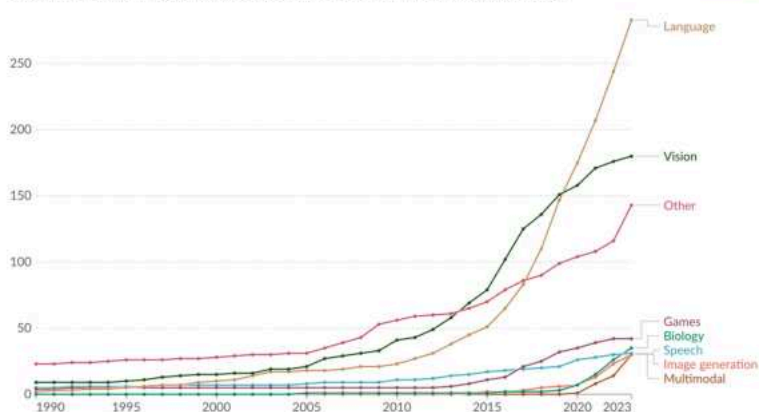
However, this uniformity comes at a cost, particularly for non-native English-speaking scientists (NNES). While they conduct rigorous and valuable research, the added burden of writing in English often **overshadows** their efforts. Submitting a paper to a high-impact journal means **meeting not just scientific standards but also linguistic ones**. Many NNES researchers find their work criticized more for grammar or phrasing than for its scientific merit. This bias, while often unintentional, **reflects a systemic disadvantage**. Studies have shown that papers authored by non-native speakers receive fewer citations, even when published in prestigious journals (Uzuner, 2008).

The challenges do not stop there. The pressure to publish in English often discourages researchers from writing in their native languages or engaging with local scientific communities. This creates a disconnect between research and the regions it is meant to serve. In many areas where English proficiency is low, such as parts of Latin America or Central Africa, findings **published exclusively in English are far less accessible to local policymakers, educators, and practitioners**. During the Zika virus outbreak in Latin America, for example, multilingual information campaigns proved critical in delivering life-saving information to populations (Björkman, 2010). Without such efforts, public health interventions could have failed, emphasizing the importance of science communicated in languages people understand.

For many non-native researchers, overcoming these challenges also comes with **financial burdens**. Professional editing and translation services, while often necessary, are expensive and time-consuming. Combined with submission fees for high-impact journals, the cost of publishing in English can be prohibitive, especially for scientists in **low-income countries** (Curry & Lillis, 2004). The result is an uneven playing field where native speakers enjoy an advantage, and brilliant contributions from non-native speakers are often sidelined.

In recent years, however, new solutions are emerging to address these linguistic barriers. Advances in **artificial intelligence** (AI) offer promising tools that could transform scientific communication. AI-driven platforms like ChatGPT and Gemini are capable of providing real-time translations, editing manuscripts, and even facilitating multilingual virtual conferences. By improving the quality and accessibility of translations, AI technology can help non-native speakers share their research more effectively and participate fully in global science.

Cumulative number of notable AI systems by domain
Specific field, area, or category in which an AI system is designed to operate or solve problems.



Data source: Epoch (2024)
OurWorldInData.org/artificial-intelligence | CC BY
Note: Systems are defined as "notable" by the authors based on several criteria, such as advancing the state of the art or being of historical importance.

INTERNATIONAL DAY OF HAPPINESS

Happiness is a concept that holds a unique meaning for **every individual around the world**. For some, it lies in a harmonious family life, for others, it's the dream job or the freedom to manage their time as they please. Yet, what unites us all is the pursuit of happiness, a **driving force** that shapes our actions and interactions with others. The ability to experience happiness is an invaluable resource, often defining a **person's true wealth** more than their social or economic status.

If happiness is such a valuable measure of human well-being, why isn't it considered an **indicator of a country's success**? For decades, nations have compared themselves primarily through **economic power, military strength**, or the stability of their currency. However, since the 1970s, **Bhutan** has pioneered a different path by prioritizing happiness as a key measure of national progress.

This approach reminds us of the importance of well-being in our lives and societies, making the International Day of Happiness a powerful occasion to reflect on what truly matters: **creating environments** where happiness can thrive for all.



The International Day of Happiness on March 20th offers a perfect opportunity to delve into Bhutan's unique concept of **Gross National Happiness** (GNH) – a visionary approach that places the well-being and happiness of its citizens at the forefront of national development. Unlike traditional measures of progress such as Gross Domestic Product (GDP), Bhutan's GNH emphasizes holistic well-being, sustainability, and **cultural preservation** as **essential elements of a fulfilling life**. This article explores the origins, evolution, and impact of Bhutan's GNH philosophy, as well as its potential as a model for sustainable development worldwide.

MAHATMA GANDHI

Happiness is when what you think, what you say, and what you do are in harmony.

INTERNATIONAL MOTHER LANGUAGE DAY

Additionally, **platforms** like SciELO in Latin America and Redalyc in Spain and Portugal have shown that multilingual publishing is not only possible but beneficial. These platforms allow researchers to publish in their native languages while **offering translations into English**, ensuring that their work reaches both local and international audiences. Journals that embrace **multilingual abstracts** and regional research are paving the way for a **more inclusive scientific community**.

The dominance of English in science is unlikely to disappear anytime soon, but recognizing its limitations is the first step toward a fairer system. **A more inclusive scientific world would embrace linguistic diversity as a strength, not a weakness.** By encouraging multilingual publishing, investing in translation tools, and reducing barriers for non-native speakers, the scientific community can ensure that valuable knowledge is shared, understood, and applied across the globe.

Science thrives on diversity—of ideas, perspectives, and languages. **To meet the challenges of the future, from climate change to global health crises, we need a truly global conversation.** Breaking down language barriers will allow all voices to be heard, enriching science with insights from every corner of the world.



Get Involved in the Next Edition of the FESTMIH Newsletter!

Do you enjoy reading about global health collaborations and inspiring projects? Become a part of the **quarterly FESTMIH Newsletter** and share your insights with our international community!

In our next edition, we'll spotlight the UN Day topic of Q2 2025, and we invite YOU to contribute:

- Choose a Q2 topic: Explore topics such as International Mother Earth Day (April 22), International Day of **Families** (May 15), or **World Refugee Day** (June 20).
- Share your ideas: Send us articles, short summaries about your organization's projects, inspiring individuals, or other content aligned with these days.

Submission Deadline: 28.02.2025

Where to send: To our E-Mail.

Your contributions help showcase the incredible work being done around the globe and inspire others in the field of health and cooperation. Let's make the Q2 issue as diverse and engaging as possible!

Origins and Evolution of Gross National Happiness

The concept of GNH was first introduced in the **1970s** by Bhutan's fourth king, King Jigme Singye Wangchuck, who famously declared, "**Gross National Happiness is more important than Gross National Product.**" At a time when many countries were pursuing rapid economic growth, King Jigme recognized that material wealth alone did not equate to true happiness or well-being. Drawing on Bhutanese Buddhist principles, he envisioned a development model that balanced material progress with **spiritual, emotional, and cultural growth.**

Since its inception, the GNH philosophy has evolved from a broad, philosophical idea into a structured, measurable framework. Over the years, Bhutan's government, in collaboration with researchers and policymakers, developed a comprehensive system to evaluate GNH, ensuring that it could be applied practically to guide national policy and development strategies.

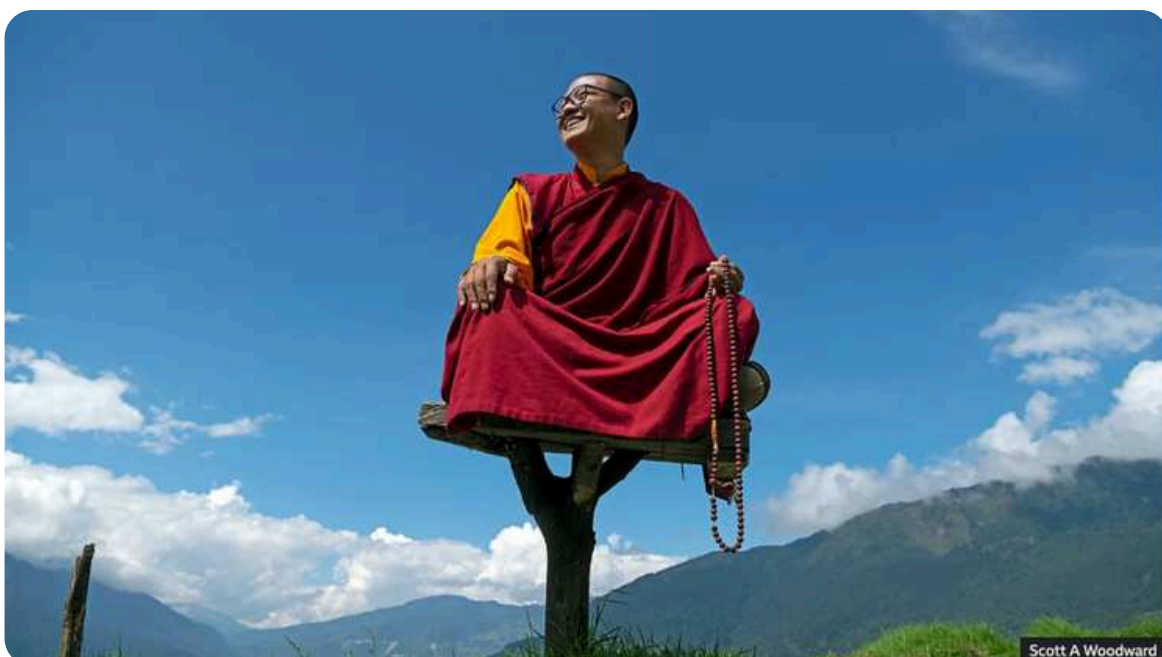
By encompassing these diverse aspects of life, the GNH framework captures the multifaceted nature of happiness and ensures that Bhutan's development strategies are aligned with the overall well-being of its people.

To translate GNH into actionable policy, Bhutan developed a **framework** based on four main pillars:

- 1. Sustainable and equitable socio-economic development**
- 2. Conservation of the environment**
- 3. Preservation and promotion of culture**
- 4. Good governance**

These pillars are further broken down into nine domains, which cover various aspects of well-being, including:

- Psychological well-being
- Health
- Education
- Time use
- Cultural diversity and resilience
- Good governance
- Community vitality
- Ecological diversity and resilience
- Living standards



The Development of the GNH Index and Surveys

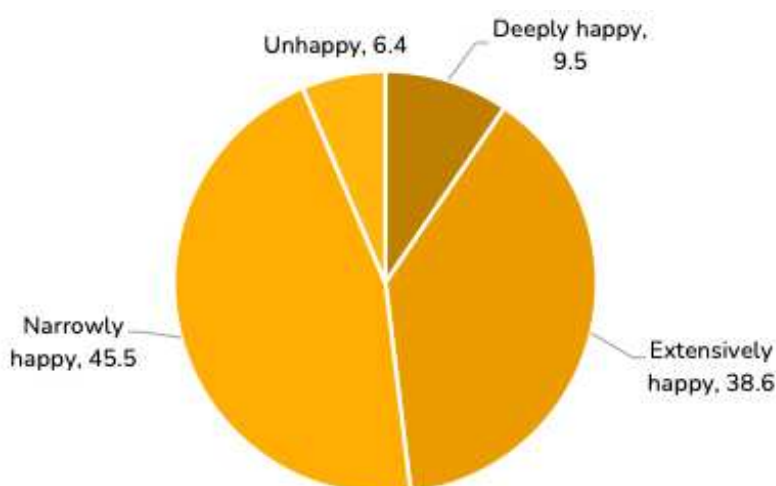
To measure GNH, Bhutan introduced the Gross National Happiness Index, which is periodically assessed through nationwide surveys. The first comprehensive **GNH survey** was conducted in 2008, marking a significant step in translating the GNH philosophy into measurable outcomes. The survey included 290 questions covering the nine domains of GNH, and it was designed to gauge the **happiness and well-being of Bhutanese citizens** across different regions, age groups, genders, and socio-economic backgrounds.

The GNH Index is unique because it goes beyond individual income or economic success. It includes indicators like cultural **participation, community relationships, time spent with family, and access to healthcare and education**. This allows for a holistic understanding of what contributes to a happy and fulfilling life, taking into account the intangible aspects of well-being that are often overlooked in conventional measures.

Findings and Trends Over the Years

Since the first survey in 2008, Bhutan has conducted GNH surveys in 2010, 2015, and 2022, which have provided valuable insights into the well-being of its citizens and the effectiveness of GNH-driven policies.

- The 2010 survey revealed that approximately 41% of Bhutanese people were "happy," meaning they achieved sufficiency in six or more of the nine domains. The survey also highlighted areas where **improvements** were needed, such as **access to healthcare** and education, particularly in rural regions.
- In the 2015 survey, the percentage of people classified as "happy" increased to 43.4%, with more people reporting satisfaction with their living standards, health, and community vitality. This progress demonstrated that Bhutan's policies were effectively addressing some of the **key determinants** of happiness, even as the country faced challenges related to globalization and urbanization (Centre for Bhutan Studies & GNH Research, 2016).
- The most recent 2022 survey suggests that Bhutan has continued to make strides in **improving happiness** (48.1% "Extensively happy" or above) and well-being across its population. However, it also reveals that challenges remain, particularly in achieving gender equality and addressing environmental sustainability in the face of climate change.



Impact of GNH on Bhutanese Society and Policy

Bhutan's commitment to GNH has had a **profound impact** on the **country's development policies** and social fabric. Unlike many countries that prioritize rapid industrialization and urbanization, Bhutan has pursued a more balanced approach that emphasizes environmental conservation, cultural preservation, and equitable socio-economic development. For example:

INTERNATIONAL DAY OF HAPPINESS

- **Environmental Conservation:**

- Bhutan is one of the few countries in the world that is carbon-negative, meaning it **absorbs more carbon dioxide than it emits**. This achievement is a direct result of GNH-driven policies that prioritize sustainable development, forest conservation, and the use of renewable energy sources.

- **Cultural Preservation:**

- The GNH framework encourages the promotion of Bhutan's unique cultural heritage, language, and traditions. The government has invested in initiatives to **preserve traditional crafts, festivals, and practices**, ensuring that Bhutan's rich cultural identity remains intact even as the country modernizes.

In addition to shaping domestic policies, Bhutan's GNH approach has inspired international interest and debate about alternative measures of development. In 2011, **Bhutan introduced** a resolution at the **United Nations General Assembly** that led to **the establishment of the International Day of Happiness**, promoting happiness and well-being as fundamental human goals (UN, 2011). This initiative has encouraged other countries to consider well-being indicators in their development planning, contributing to a broader shift toward more holistic measures of progress.

Challenges and Criticisms of the GNH Model

While Bhutan's GNH philosophy is widely admired, it is not without its challenges and criticisms. Some argue that the GNH approach can be difficult to implement consistently, especially in the face of economic pressures and the need for modernization.

Additionally, critics have pointed out that certain aspects of Bhutanese society, such as limited freedom of the press and the treatment of minority groups, may not align perfectly with the principles of GNH (Briggs, 2013).

Nevertheless, Bhutan's commitment to prioritizing happiness and well-being over purely economic growth remains an inspiring example of how nations can pursue more balanced and sustainable development.

Be Part of the Next FESTMIH Newsletter!

Celebrate global health by contributing to our Q2 2025 Edition!

Choose a **UN Day topic** and send articles, project summaries, or inspiring stories to our [E-Mail](#).

Deadline: 28.02.2024



Conclusion: A Model for a Happier World?

Bhutan's journey with GNH offers **valuable lessons for countries worldwide**. By embracing a more holistic approach to development, Bhutan demonstrates that happiness and well-being can be central to national progress. While GNH may not be directly transferable to every nation, its principles challenge us to rethink how we define success and consider whether economic growth alone is sufficient for achieving a truly happy society.

As we celebrate the International Day of Happiness, Bhutan's GNH reminds us that **true happiness stems from a balance between material wealth, emotional well-being, environmental sustainability, and cultural richness**. In an increasingly interconnected world, Bhutan's experience offers a beacon of hope and a call to action for societies seeking a more equitable and joyful future.

WORLD WATER DAY

*The German Toilet Organization and access to clean water and sanitation
A step towards improving global health*

Water and basic sanitation are fundamental human rights. Nevertheless, according to the United Nations, **2 billion people do not have access** to safe drinking water. 3.6 billion people have no safe sanitary facilities and around 494 million people defecate in the open. For those affected, this is an inhumane and sometimes dangerous situation. For example, **women** who go to the toilet **outdoors are often attacked or raped**. The lack of sanitary facilities and clean water poses considerable risks to health and the environment. For example, uncontrolled sewage pollutes groundwater, rivers and soil. The lack of toilets and adequate sanitation contributes to the **spread of disease** and poses a particular threat to women, the elderly and children. According to the World Health Organization, around 842,000 people die every year in low- and middle-income countries due to inadequate water and sanitation and a lack of hygiene. For example, relieving oneself in the open increases the risk of suffering from diarrhea or worm infections. **Children** who grow up in poor hygiene and sanitary conditions are often affected by **malnutrition** and have stunted growth. Good sanitation and water supply play a central role in sustainable development. The international community also recognized this at the turn of the millennium, when halving the proportion of people without access to clean water became one of the main goals of the United Nations Millennium Development Goals (MDGs). In 2015, the UN took stock: although its catalog of measures had brought some success, many inequalities persisted and progress had not been made everywhere.

Water is the essence of life. It is essential for drinking, cooking, sanitation, agriculture, and industry, supporting ecosystems and human livelihoods. Despite its fundamental role, billions of people worldwide lack access to clean and safe water, creating devastating consequences for health, education, and economic development. World Water Day, observed annually on March 22, serves as a reminder of the global water crisis and urges action to ensure access to clean water for all.

Based on the eight MDGs, 17 Sustainable Development Goals (SDGs) were then formulated.

One of these goals, **Goal 6**, calls for ensuring **access to clean water and safe sanitation** for all by 2030 and managing these sustainably. The German Toilet Organization (GTO), based in Berlin, has been working towards Sustainable Development Goal 6 since 2005. Its aim is to raise awareness of the importance of sanitary facilities and hygiene and to enable access to safe toilets through concrete assistance. In addition to implementing projects, training courses and events on the topic of "Water, Sanitation and Hygiene" (WASH), the GTO is also involved in political campaigns and networks. It works closely with local governments, international partners and NGOs to develop sustainable solutions.

THE IMPORTANCE OF EDUCATION AND TRAINING

GERMAN TOILET ORGANIZATION

The German Toilet Organization e. V. (GTO) is a non-profit, non-governmental organization active in the fields of development cooperation, humanitarian aid, health and environmental protection.

The GTO's vision is equal access to clean toilets and sustainable sanitation for all people. To this end, the GTO carries out projects, campaigns and educational events abroad and in Germany. The GTO has been a partner of the United Nations (UN-Water) since 2008 and has been the secretariat of the WASH network - consisting of 30 German non-governmental organizations that are committed to the issues of water, sanitation and hygiene (WASH) worldwide - since 2011. The organization is based in Berlin. Further information at:

www.germantoilet.org

www.washnet.de

One of the GTO's main objectives is to **disseminate WASH expertise**, for example through training courses for employees of other organizations in Germany and abroad. As a founding member and secretariat of the German WASH network, which consists of 30 German non-governmental organizations, the GTO is committed to a continuous **exchange of knowledge** and a stronger link between emergency aid, transitional aid and development cooperation. WASH is a key issue in development cooperation and humanitarian aid, be it in health or food security programs, in disease prevention and strengthening resilience as well as in the construction of schools and health facilities. People without safe water and sanitation, for example, live with an increased burden of disease. **The WHO has calculated that access to WASH alone could reduce the global health burden by 10%.** If nothing is done here, a significant increase in waterborne diseases can be expected.

As many NGOs have little or no expertise in the field of WASH, the GTO has been filling an important knowledge gap in this area for many years through its training courses. A particular focus here is on **sustainable sanitation solutions**. The area is complex, as **different technologies** are used depending on the **region, culture and religion**. The choice of the right solution also depends on the local economic, ecological, climatic and technical conditions. In areas with a water supply and livestock farming, for example, wastewater can be treated using biogas fermentation, which produces environmentally friendly energy and hygienic, nutrient-rich irrigation water. In arid regions or areas without access to water, where around 1.3 billion people live, **composting, dehydration or dry toilets** are an option. These do not require flushing water and allow human excrement to be processed into high-quality fertilizer. The primary goal is to protect health, and if socially acceptable, locally maintainable and sustainable to operate, ecological aspects should be taken into account.

School in Kampala
(Uganda) | © James
Kiyimba Team



THE IMPORTANCE OF EDUCATION AND TRAINING



German
Toilet
Organization

In addition to the more technical aspects, the GTO also attaches great importance to **health education and hygiene education**, both in Germany and abroad. Unlike the workshops, which are designed for adults, the GTO includes in its work the target group that is most affected by the consequences of a lack of access to toilets and clean water, namely **children and young people**. Every year, around **800,000 children under the age of five die from diseases caused by unclean water** and poor sanitation and hygiene. As the lack of access affects not only the home but also the school environment, there are consequences not only for children's health and well-being, but also for their **education**. A third of all schools worldwide do not have adequate WASH facilities. Dirty water and inadequate hygiene promote the spread of infectious diseases, which in turn can lead to frequent absenteeism. Children who stop for hours because they can't or won't go to the toilet concentrate less well and are at higher risk of urinary tract infections, bladder problems or even kidney damage. The cycle of illness and poor education can contribute to increased poverty and inequality in affected communities. For girls, the lack of sanitary facilities and associated privacy at menstrual age can even lead to **dropping out of school** because so much education is missed if they are absent from

THE GTO'S SCHOOL PROJECTS

The GTO has been working in and with schools for 15 years. Its main goal is to achieve a sustainable improvement in the sanitation and hygiene situation by changing **awareness** at political, social, institutional and administrative levels. After all, schools are places of learning and contribute to a sustainable society. With the help of GIZ and Knorr-Bremse Global Care, the GTO has very successfully established the "**Toilets Making the Grade®**" (TMG) concept abroad over the past five years. As part of TMG, nationwide or regional school competitions are organized by the government or regional administrations. Abroad, competitions have already been held in Jordan, Pakistan, Uganda, Colombia and Zambia, sometimes with different thematic focuses and repeatedly. Schools invited to take part can register for the competition via the web portal www.toilets-making-the-grade.org developed by the GTO and then develop their **own concepts** for maintaining and improving their sanitary facilities and washrooms. These include toilet clubs and clear reporting chains to rectify defects, hand-washing murals, loo songs and social media campaigns. The competition entries are then evaluated and awarded prizes by local stakeholders. The TMG approach not only promotes hygiene and cleanliness, but also encourages initiative and a sense of responsibility among children and responsible adults.



School in Kampala (Uganda) |
© James Kiyimba Team



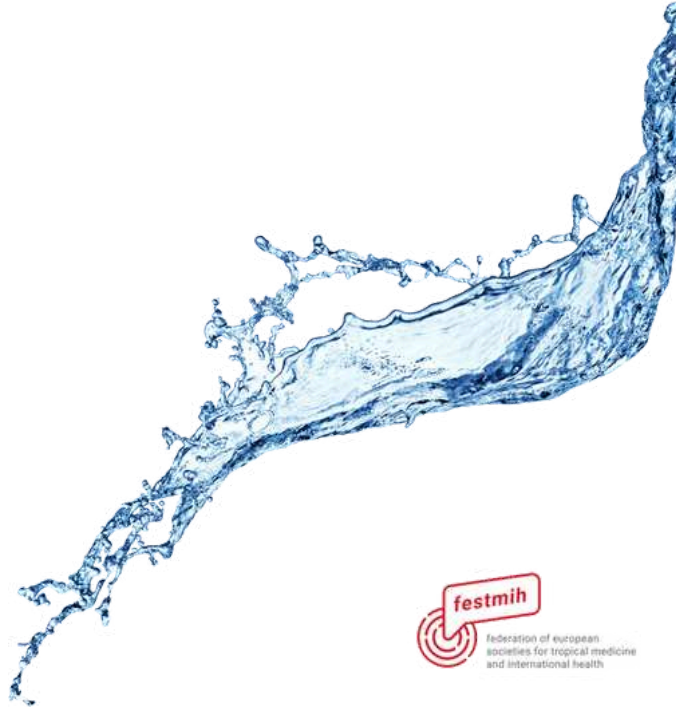
THE GTO'S SCHOOL PROJECTS

The GTO has already held 3 school competitions in Germany, in this case under the title "Toiletten machen Schule®". Most recently in 2024, over 130 schools submitted individual improvement concepts and showed with their problem analyses that there is also a great need for action in **Germany** when it comes to school toilets. This is also underlined by a study conducted by the GTO 2023 at schools in Berlin. Sometimes there is a lack of toilet paper and soap, sometimes the drain is blocked, sometimes there is a lack of proper ventilation. Menstruating people often want more privacy or access to free menstrual products. Many children stop during the day for a variety of reasons and only go to the toilet again when they get home. To manage this, **25% of pupils eat and drink less during the school day**. This can result in a lack of concentration and physical complaints. And it's not just individual health that is at stake in many places. The **COVID-19 pandemic has highlighted the importance of WASH in schools** for infection prevention. In schools in particular, access to water and soap is essential for regular hand washing - without access, the risk of disease transmission is significantly increased. In many cases during the pandemic, this meant that classes were suspended indefinitely, which further increased educational inequalities, especially in poorer regions. Globally, African countries were affected the longest by school closures during the COVID-19 pandemic. While the global average was around 20 weeks, schools in many African countries remained closed for between 25 and 40 weeks or even longer. According to a UNICEF report, schools in Uganda, where the GTO also conducts its TMG competitions, remained closed for almost 2 years, i.e. 83 weeks. In Kenya it was 37 weeks, in rural Nigeria 33 weeks and in South Africa 24 weeks. The **lack of access to distance learning** (lack of internet and equipment) and adequate WASH infrastructure made it difficult to maintain school operations and protect students, resulting in significant learning loss.



German Toilet Organization

According to UNESCO and UNICEF, the prolonged closure of schools in African countries led to a significant increase in educational inequalities. Around 100 million children in Africa were affected. To minimize the spread of COVID-19 in schools, WHO and UNICEF strongly recommended investing in **improving WASH infrastructure**. This included the construction of hand-washing stations, the provision of soap and disinfectants as well as regular training on proper hand-washing and hygiene behavior. This is precisely where the GTO comes in with its specialist training courses and, in particular, the school competitions. School is a place of change. What the pupils learn there they usually take home with them and into the community. In the medium term, the GTO would like to find partners who can help spread the GTO competition concept to many other countries with financial resources or good networking. At some point, implementing stakeholders should be able to run the competitions without any support from the association, thereby raising awareness in their country of the importance of sanitation and hygiene in schools and at the same time bringing about concrete improvements in infrastructure and education.



A NOTE OF GRATITUDE AND LOOKING AHEAD

As we close this edition of the FESTMIH Newsletter, we reflect on the **incredible journey** of crafting this **collaborative publication**. It has been a true pleasure working with such a **passionate and diverse group of contributors** who have shared their stories, insights, and projects to bring this issue to life. Your commitment to health equity, scientific progress, and global cooperation is evident in every word and idea that graces these pages.

This newsletter is **more** than just a **collection of articles**; it is a **celebration** of the **spirit of collaboration** that drives meaningful **change across borders** and disciplines. From shining a spotlight on the International Day of Neglected Tropical Diseases to amplifying the voices of women in science and exploring Bhutan's Gross National Happiness, your contributions have created a rich tapestry of inspiration and knowledge.

One of the unique joys of this project is seeing how each contribution reflects the diversity of perspectives in global health and science. Whether through stories of groundbreaking research, reflections on systemic challenges, or practical solutions to pressing issues, each article contributes to a larger narrative of progress and possibility.

A Quarterly Commitment to Connection

We are excited to **continue** this journey **with you**. The FESTMIH Newsletter is a **quarterly publication**, and each issue is carefully **curated around** the **United Nations International Days**, celebrating their relevance to global health and cooperation. We aim to foster a **platform** where our **community** can **share, learn, and inspire** action.

Do you have a story, project, or initiative to share? Or perhaps you know an inspiring individual or organization that deserves the spotlight? We would **love** to **hear from you!** The next edition will focus on the **UN International Days of Q2 2025**, such as World Refugee Day, among others.

To explore the **full list** of upcoming observances, visit the **[UN International Days page](#)**. If you're ready to contribute, send your ideas, articles, or summaries to our team at this **[E-Mail](#)**.

Your Voice Matters

We believe that **every voice** in our community **holds the power to inspire and create change**. By participating in the newsletter, you are not only **showcasing your work** but also **contributing** to a **global** conversation that addresses **critical challenges** and **celebrates successes** in **health and science**.

We are grateful for your ongoing support and engagement, which make this newsletter possible. Let's continue to grow this platform together, fostering an even stronger community dedicated to health equity, collaboration, and innovation.

Thank you once again for being part of this endeavor. We look forward to your contributions and to celebrating the many ways we can impact the world—**together**.

Warm regards,

The FESTMIH Newsletter Team

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