

# Tackling inequality is a political choice

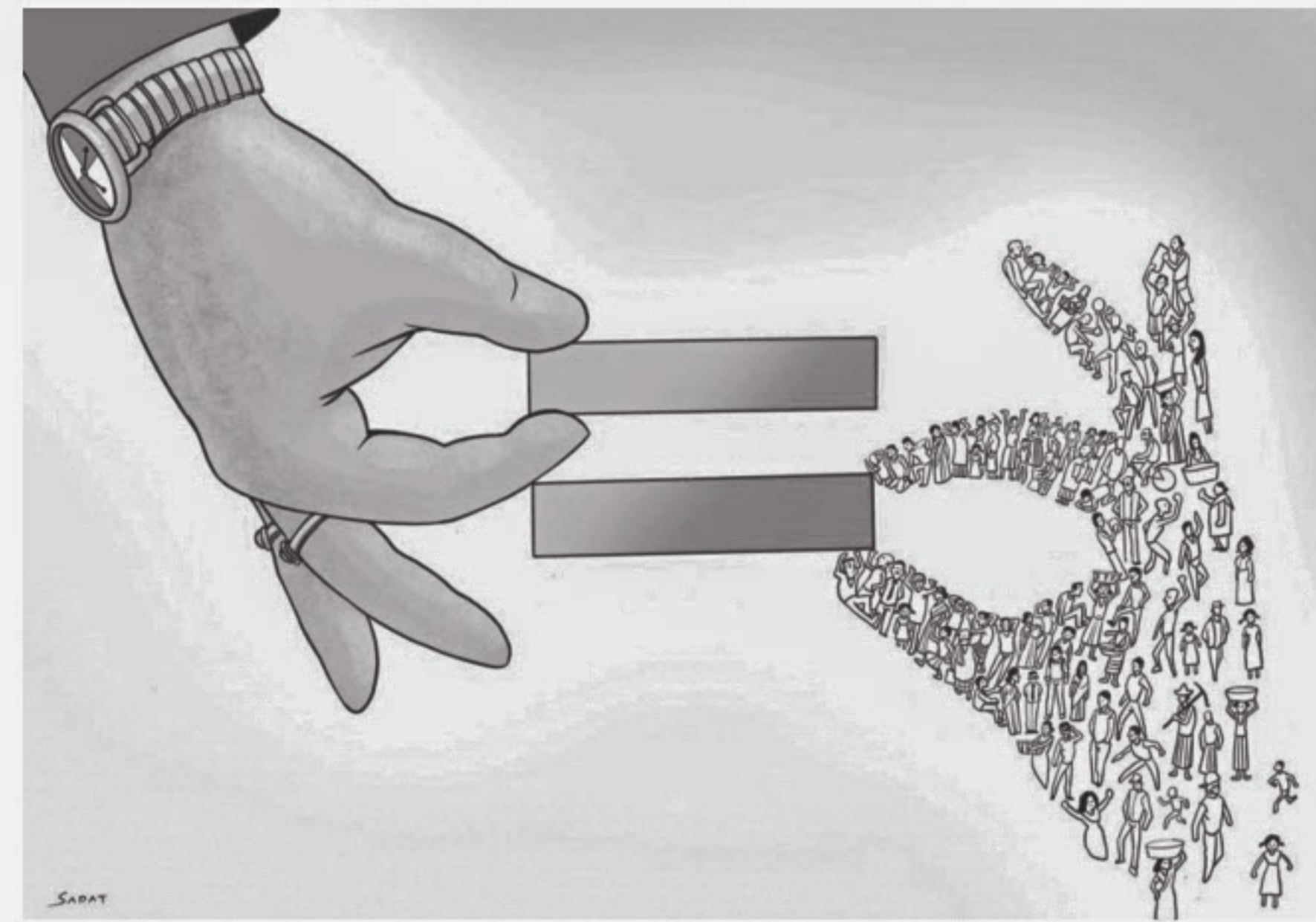
MAHMOUD MOHIELDIN and CAROLINA SÁNCHEZ-PÁRAMO

**T**HE world has made impressive strides in reducing extreme poverty, but that progress has slowed considerably in recent years. The problem is clear: eliminating extreme poverty requires tackling inequality.

The good news is that inequality between all people worldwide has declined since 1990, mirroring the reduction in poverty. The bad news is that within-country inequality has risen. Compared to 25 years ago, the average person today is far more likely to live in an economy with higher inequality. And, beyond income and wealth, there are still large disparities—between and within countries—with respect to food and nutrition, health care, education, land, clean water, and other things essential for a full and dignified life.

Far from being inevitable, inequality is a political choice. Governments that want to reduce income and wealth gaps and improve the lives and opportunities available to their poorest have shown both effort and some progress. Since 2015, the United Nations Sustainable Development Goals—specifically Goal 10—have brought unprecedented attention to this issue.

And at this month's High-Level Political Forum, the international community has its first chance to take stock of the progress made toward combating inequality, both globally and at the national level. To that end,



the World Bank Group and the UN Department of Economic and Social Affairs recently held a preparatory meeting to highlight how governments can step up their efforts in this area. The meeting produced several key findings and outcomes:

First, inequality is frequently driven and compounded by a combination of social circumstances, such as the composition or economic status of one's family, geographic location, ethnicity, and gender. These factors can all contribute to inequality of opportunity, and all are exacerbated by income inequality itself. And, because inequality of opportunity reduces social mobility from one generation to the next, it

creates persistent inequality traps.

Second, to remove barriers to opportunity, governments must address the root causes of inequality by identifying and eliminating discriminatory laws, not least those that actually criminalise disadvantage. Moreover, given that inequality largely begins in childhood, governments must invest far more in high-quality universal health care and early childhood education. Only by supporting the creation of human capital from an early age can we ensure that inequalities in one generation aren't passed on to the next.

Third, such investments will require additional domestic resources. In

general, progressive taxation is critical for increasing government revenues. But so, too, is expanded administrative capacity, so that governments can prevent tax evasion and limit illicit flows of resources across borders. With better resource mobilisation, social transfers and protections can become powerful tools for reducing income and wealth disparities.

Fourth, governments need to ensure that the benefits of progressive policies accrue to those who need them most. To that end, policymakers should solicit the perspectives of their underprivileged citizens when crafting and implementing new measures to reduce poverty and inequality. Giving a voice to the poor would yield more authentic analyses of current challenges, while ensuring that resources are directed to where they are needed most.

Finally, the lack of data is a barrier to effective policy design. To map inequality comprehensively, decision-makers must be able to answer the question of who benefits from any given policy, law, political structure, or cultural norm. Education, climate, health, food security, and infrastructure are just a few of the many areas where governments need more and better data. Though data collection is an expensive, skill-intensive exercise, recent innovations have substantially expanded the options available for governments.

For example, traditional data sources such as household surveys, which generally fail to capture incomes at

the top (including the top 1 percent), are now being complemented by administrative and tax data to fill in longstanding knowledge gaps. Nonetheless, we will need to develop more and better metrics that capture various manifestations of inequality so that all actors—governments, stakeholders, multilateral institutions, civil society organisations, and the media—can directly measure progress toward achieving SDG 10.

The barriers to inequality-reducing policies often reflect a lack of political will to remove them. Policymakers should recognise that large and persistent disparities between groups are bad not just for the economy, but also for political and social stability. Social cohesion and public trust in institutions cannot be sustained in the absence of equal opportunity and policies that reflect unifying narratives.

World leaders will take stock of the progress made toward the SDGs at a summit in September. They must reaffirm their commitment to the global goals, and specifically to SDG 10. The World Bank Group will focus its energy and resources to see the effort through between now and 2030. But that will not be enough. Reducing inequality within countries and internationally will take a global village.

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# A tribute to the life and legacy of Maryam Mirzakhani

ASM SHAHIDUL HAQUE

**T**HE second death anniversary of Iranian mathematician Maryam Mirzakhani has passed quietly early this week. Not many people in Bangladesh are probably familiar with the work of this mathematics genius, but globally, she is held in high regard because of her ground-breaking work. For those who do not know, Maryam Mirzakhani was the only female mathematician to have won a Fields Medal, the most prestigious award in mathematics, often described as the Nobel Prize for this subject.

Maryam was born in 1977 in Tehran, Iran, and worked as a professor of mathematics at Stanford University, USA, before dying of cancer on July 14, 2017—at the age of 40. Her death was viewed as a great blow to mathematics and the mathematical community and a great loss for humankind. Her date of birth, May 12, was proposed as the "International Women in Mathematics Day". Satellogic launched a miniaturised satellite into space on February 2, 2018 in honour of her memory. When she died, the whole world mourned her passing, the Iranian media covered it extensively, and published her picture without hijab, which would have been unthinkable under normal circumstances.

Maryam was a two-time gold medallist at the Math Olympiad, in 1994-95. She obtained her PhD at Harvard in 2004. Not to mention, as an Iranian citizen, she had to overcome barriers to join an Ivy League university.

Her dissertation was a masterpiece. As another great mathematician described it—"the majority of mathematicians will never produce something as good." In that, Maryam solved two longstanding problems. Each of the problems was significant on its own merits but she combined the two and presented their solutions in one thesis paper. Out of this thesis emerged papers that would later be published in top three mathematics journals.

Maryam contributed in areas such as Teichmüller theory, hyperbolic geometry, ergodic theory, symplectic geometry, etc. Her thesis showed how to compute the Weil-Petersson volumes of moduli spaces of bordered Riemann surfaces. The simplest way to explain her work would be to say that she proved many amazing theorems about the shortest paths between two points—called "geodesics"—on curved surfaces, among other remarkable achievements in geometry and beyond. Her work was highly theoretical in nature, but it left a deep mark on theoretical physics, especially about how the universe came to exist, and—because it could inform quantum field theory—on secondary applications to engineering and material science. Within the mathematical field, it has implications for the study of prime numbers and cryptography.

Maryam's untimely death, therefore, was one of the saddest losses in the field of mathematics. One of her colleagues mourned her death saying, "a light was turned off today, it breaks my heart.... Gone far too soon."



Maryam Mirzakhani (1977-2017)

PHOTO: AFP/THE SEOUL ICM 2014

Another described her legacy by saying, "Maryam is gone far too soon, but her impact will live on for the thousands of women she inspired to pursue math and science." Her friends praised her as a great scientist who attempted to solve a problem that was not solved before, to understand what was not understood before. She was driven by a deep intellectual curiosity. Any success brought her pure and simple joy.

She was a gentle, humble person and a great teacher as well as a supervisor. Maryam once said, in a rare interview:

"I can see that without being excited, mathematics can look pointless and cold. The beauty of mathematics only shows itself to more patient followers." She was known to her colleagues as "a virtuoso in the dynamics and geometry of complex surfaces" but to her 6-year-old daughter, she was "something of an artist" who used to draw things on paper for hours in an enthusiastic attempt to discover formula that can describe the complexities of curved surfaces.

During her final years, she


collaborated with another mathematician to search the answer for a mathematical challenge that physicists have struggled with for a century—"the trajectory of a billiard ball around a polygonal table." Her extraordinary work in this regard was explained thus—"she considers not just one billiard table, but the universe of all possible billiard tables. And the kind of dynamics she studies doesn't directly concern the motion of the billiards on the table, but instead a transformation of the billiard table itself, which is changing its shape in a rule-governed way; if you like, the table itself moves like a strange planet around the universe of all possible tables..." That investigation led to a paper, immeasurably valuable in the field of mathematics, which came close to explaining the complexities of "string theory"—the complexity of how the universe is expanding and functioning seemingly without any collusion. May be, just maybe, the world lost a female Einstein in the making.

Maryam will inspire generations of mathematicians to come, particularly female. She could foresee that too, as she said in her speech while receiving the Fields Medal—"This is a great honour. I will be happy if it encourages young female scientists and mathematicians. I am sure there will be many more women winning this kind of award in coming years."

Let us pay our respects to Maryam Mirzakhani and learn from her extraordinary life and work.

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**QUOTABLE Quote**



**JRR TOLKIEN**  
(1892–1973)  
English writer, best known as the author of *The Hobbit*, *The Lord of the Rings*, and *The Silmarillion*.

*I wish life was not so short. Languages take such a time, and so do all the things one wants to know about.*

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**BEETLE BAILEY** by Mort Walker



DO YOU MIND IF OTTO JOINS US TODAY?  
OKAY, IT MIGHT BE FUN



BUT IF HE BEATS ME, I'M GIVING UP GOLF!  
WHACK!

**BABY BLUES** by Kirkman & Scott



OW! NO BITING, WREN! NO! NO!



NO! NO! NO! NO! NO!



ON SECOND THOUGHT, I'LL TAKE THE BITING!