

# 2024 IMPACT REPORT



#### FIRST. GLOBAL CHALLENGE 2024 ATHENS / AOHNA

TITLE SPONSOR



FIRST, GLOBAL CHALLENGE 2024 ATHENS / AGHNA

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FIRST GLOBAL HAS GENUINELY **FUELED MY INTEREST IN STEM** AND MY PASSION FOR ENGINEERING. IT HAS MADE ME MORE OF A PROBLEM SOLVER, AND... HAS MADE ME SEE THE **BIGGER PICTURE**—THAT EACH NATION'S CHALLENGES RELATED TO FOOD, WATER, ENERGY, AND SUSTAINABILITY AREN'T THEIR OWN. THEY ARE ALL OF OURS, AND WE MUST WORK **TOGETHER** TO ACTIVELY FIND SOLUTIONS. IT ALSO MADE ME FEEL LIKE **WE DO INDEED** HAVE THE POWER TO SOLVE THE WORLD'S PROBLEMS, WE JUST NEED THE WILL AND DETERMINATION TO DO SO.

-Female participant, Team Zambia



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Lam



# EVERY KID HAS THE POTENTIAL TOCHANGE THE WORLD,

But not every kid has access to the opportunities and resources that unlock their talent.

# THE FIRST® GLOBAL PLAYBOOK

The sport of robotics inspires leadership and innovation in students from all nations by empowering them through education in science, technology, engineering, and math (STEM) to be the visionary global citizens our world needs.

Through the *FIRST* Global Robotics Challenge, New Technology Experience, and other activities, teams of youth from every nation develop their technical and interpersonal **skill sets** as they compete in a season themed around an **important global issue**.

> By nurturing **cross-cultural communication** and **cooperation** among high school students around the world, *FIRST* Global prepares them to **collectively tackle the world's greatest challenges** and develop solutions that improve quality of life for all.

LEARN MORE AT FIRST.GLOBAL >

# **FOUNDER'S LETTER**

Greetings to the FIRST Global Community,

As we reflect on an extraordinary season, I am filled with gratitude for the achievements and milestones we reached together in 2024. This year, we convened in historic Athens, Greece—the birthplace of democracy, scientific inquiry, and the Olympic spirit. Just as the first-ever Modern Olympians marched across the Panathenaic Stadium over 100 years ago, so did our teams in a moment never to be forgotten. With a new record of 193 teams represented, we united the next generation of STEM leaders across borders and cultures in a shared pursuit of innovation and understanding, in a powerful testament to the strength of the *FIRST* Global community.

This year's *Feeding the Future* theme highlighted one of the greatest issues of our time: ensuring that all people have access

to an equitable, sustainable, and nutritious food supply. Through months of problemsolving, collaboration, and perseverance, these young innovators remind us that the solutions to today's challenges lie in partnership, embodying the spirit of *Coopertition*<sup>®</sup> and *Gracious Professionalism*<sup>®</sup>.

> I am especially proud of the continued commitment to the <u>Declaration of</u> <u>Interdependence</u> <u>and the Bill of</u>



Responsibilities, which teams signed again this year. In a time when the world can



feel increasingly divided, our students reaffirmed their dedication to these values, showing us that cooperation is a cornerstone of a brighter future. We also made clear to the world what the *FIRST* community has known for a long time: that robotics is a sport. Over 130 teams joined our campaign to have their nation declare robotics a sport. Thus far, both Belize and Indonesia have achieved this official declaration, but we expect many more to follow.

Of course, none of this would be possible without the unwavering dedication of our volunteers, sponsors, and partners. This year, we were especially fortunate to work alongside Lam Research, the Hellenic Republic, the Bezos Earth Fund, the Tullman Family Office and many other incredible supporters striving to bring STEM education to all of the world's two billion children.

As we look to the future, our work is far from finished. We face challenges that are as vast as they are urgent, but the passion, ingenuity, and determination of this community give me confidence in what we can achieve together. Through *FIRST* Global, we are not just building robots; we are building the foundation for a brighter, more sustainable, and more peaceful world.

Thank you for being part of this extraordinary journey.

With gratitude,

BE A SUPPORTER >





# Image: State of the state of





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Teams signing on to FIRST Global's Declaration of Interdependence and Bill of Responsibilities in Athens.

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# **TITLE SPONSOR LETTER**

At Lam Research, we are motivated every day by our guiding principle to *act with purpose for a better world.* 



In that spirit, Lam was proud to help make possible this year's *FIRST®* Global Challenge through a grant from the Lam Foundation and the volunteer support of 54 employees, who served as Global STEM Corps (GSC) advisors to teams around the world and judges for the New Technology Experience.

The *FIRST* Global Challenge provides the transformative learning experience critical to attracting and motivating the next generation of leaders in science, technology, engineering, and math. These young people, from every corner of the planet, demonstrated the behaviors that will help them succeed in the complex future world of work: problem-solving, innovative thinking, collaboration, and intellectual curiosity.

The students inspired me, and I can't wait to see the difference they make as they use the spark they found at the *FIRST* Global Challenge to change the world.

> Congratulations to all the teams. They are all winners!

> > -Steve Fine, Chief Communications Officer and Head of Social Impact Programs; Lam Research, 2024 Title Sponsor



#### THE TEAMWORK AND AGILITY WE SAW ON THE COMPETITION FLOOR ARE THE SKILLS CRITICAL FOR SOLVING THE MOST PRESSING ISSUES FACING US TODAY AND IN THE DECADES TO COME. **THESE AREN'T JUST TEENS—THEY ARE FUTURE LEADERS.**

-Sarah Miller, Lam employee and FIRST Global volunteer

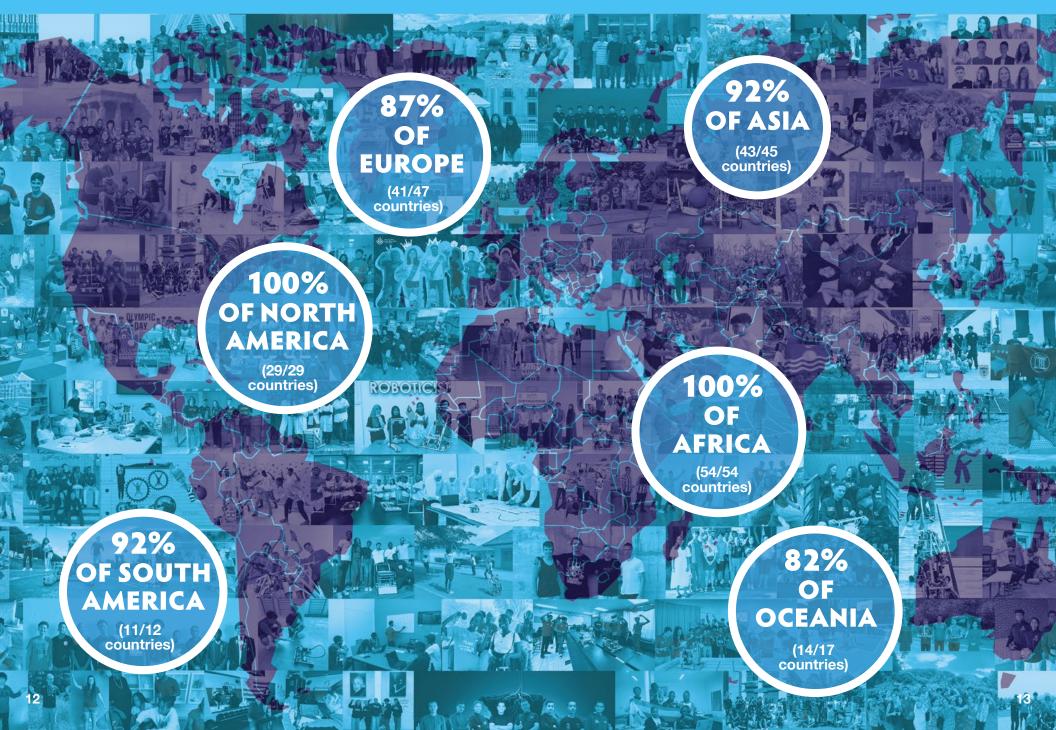


I MET STUDENTS FROM AROUND THE WORLD WHO, DESPITE IMMENSE CHALLENGES IN THEIR HOME COUNTRIES, BUILT EXTRAORDINARY ROBOTS—PROVING THAT THESE YOUNG INNOVATORS ARE FIERCELY DETERMINED TO SUCCEED. THEIR RESILIENCE, INGENUITY, AND BOUNDLESS POTENTIAL WILL CHANGE THE WORLD.

-Kelly Lymberopoulos, Lam employee and *FIRST* Global GSC team advisor



# **OUR GLOBAL REACH**



**FIRST** GL®BAL

# TEAMS REPRESENTED

This year we had the largest number of participating teams to date -193! Click on a team to view their profile page on the *FIRST* Global website.



♦ A changemaker team that contributed to measuring FIRST Global's impact in 2024.



GL®BAL





# FIRST GLOBAL CHALLENGE

#### FEEDING THE FUTURE IN ATHENS

The 2024 theme of *Feeding the Future* challenged *FIRST* Global teams to learn about and address the obstacles and opportunities to provide the global population with equitable, safe, nutritious, and environmentally responsible food. *FIRST* Global teams learned about the intricate and interdependent relationship between water, energy, and food, and the need to sustainably manage and balance these global resources. In the robotics challenge, two randomly-selected three-team regional alliances worked together to conserve water and energy and produce food. All six teams then merged to form one global alliance to secure food and balance global resources to support a sustainable food system. Students even embraced the theme beyond the game:





MY EXPERIENCE WITH FIRST GLOBAL HAS **PROFOUNDLY IMPACTED ME** IN WAYS I NEVER IMAGINED. IT WAS MORE THAN JUST A COMPETITION— **IT WAS A LIFE-CHANGING JOURNEY THAT OPENED MY EYES TO THE POWER OF COLLABORATION,** INNOVATION, AND DETERMINATION.

-Female participant, Team Madagascar

#### **SEASON ACTIVITIES**

In addition to building and operating a robot for the game and experimenting with new technologies, teams also participated in 14 **Social Media Challenges**, showcasing their culture and championing STEM in their communities. Some of the activities students completed include hosting meetings with other teams, talking with government and community leaders to advocate for the sport of robotics, cooking a national dish, organizing outreach activities, getting in the news, and *several teams even met with their nation's Olympians!* And the **Skills Challenge** enabled teams to show off their robots' abilities in performing the actions required for the *Feeding the Future* 



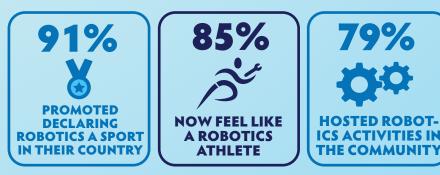
game.

VIEW THE 2024 SEASON ARCHIVE

# ROB©TICS SPORT

### *H* BECAUSE **EVERY CHILD** DESERVES TO BE GOOD AT A SPORT.

—Female participant, Team Great Britain



Data sourced from FIRST Global students' post-participation self-evaluations.



ROBOTICS IS MORE THAN JUST A RESEARCH FIELD OR A GEEK CLUB IN SCHOOLS. IT IS A MENTAL AND PHYSICAL SPORT THAT NOT ONLY MAKES YOU SMARTER, BUT IT ALSO CREATES GENERATIONS OF EXPERTS IN EVERY FIELD THAT CAN ONLY MAKE TOMORROW A BETTER AND MORE ENJOYABLE PLACE.

-Male participant, Team Algeria

S A SPORT.

Just like athletes in any other sport, robotics demands teamwork, strategy, and dedication, offering

young innovators a platform to develop STEM skills and leadership abilities. What sets robotics apart is that it's the only sport where everyone can go pro. This year, our global campaign to declare robotics a sport was taken up by teams from more than **130 countries**, with several making progress with their officials. Join us in championing robotics as a sport to empower young minds and build an innovative, more collaborative future around the world.



# NEW TECHNOLOGY EXPERIENCE (NTE)

The New Technology Experience is a fundamental component of *FIRST* Global's annual program. It was established as a means for the student community to stay current with cuttingedge technology, become experts in emerging fields, establish stronger network connections among their peers, and improve competitiveness for college, internships, and employment.

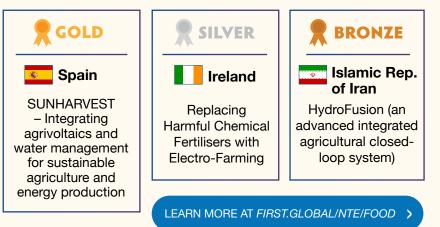
The *Feeding the Future* New Technology Experience engaged teams in learning about the technologies that support sustainable food systems. Students developed their own solutions to improve the type of foods produced, methods of production, and waste reduction, while highlighting how the application of these technologies benefits economic, social, and environmental sustainability. From 78 submissions across six continents, 10 finalist teams presented their innovations to judges in Athens, from which three winners were selected.



THE NEW TECHNOLOGY EXPERIENCE... PROVIDED [STUDENTS] WITH THE **OPPORTUNITY TO THINK CRITICALLY,** EXPERIMENT WITH INNOVATIVE SOLUTIONS, AND GAIN HANDS-ON EXPERIENCE WITH CUTTING-EDGE TOOLS. THIS CHALLENGE NOT ONLY EXPANDED THEIR TECHNICAL KNOWLEDGE, BUT ALSO INSPIRED CREATIVITY AND **A DEEPER UNDERSTANDING OF HOW TECHNOLOGY CAN ADDRESS REAL-WORLD PROBLEMS.** 

-Mentor, Team Ethiopia

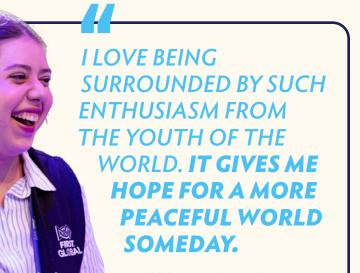
#### **FIRST GLOBAL INNOVATOR AWARD**



# VOLUNTEERS

*FIRST* Global is a volunteer-driven organization. The Global STEM Corps (GSC) is *FIRST* Global's network of grassroots volunteers who motivate and mentor teams as they design, program and build their robots in preparation for competition. In 2024, 72 teams received support through the GSC.

Without a cadre of knowledgeable and energetic international event volunteers it would be impossible to host the *FIRST* Global Challenge event. International volunteers fill a wide variety of roles, with more than 20 different technical and non-technical positions, ranging from robot inspectors and technical judges to queuing and pit administration. The event in Athens was supported by volunteers from 53 countries, 77% of which were from outside of the United States of America.



Volunteer from the
United States of America







VOLUNTEERING WITH FIRST HAS BEEN A CRUCIAL EXPERIENCE IN MY LIFE, ONE THAT HAS CHANGED ME SIGNIFICANTLY—MAKING ME A BETTER PERSON, MY HORIZONS EXPANDED, AND PUSHING ME TO STRIVE FOR EXCELLENCE. I'VE MET PEOPLE FROM ALL OVER THE WORLD, LEARNED ABOUT DIFFERENT CULTURES, AND SHARED EXPERIENCES AND PERSPECTIVES. IT'S SOMETHING I WILL ALWAYS BE PROUD OF AND CONTINUE TO DO.

-Volunteer from Libya

I RECENTLY HAD THE OPPORTUNITY TO HEAR AMERICAN ASTROPHYSICIST AND WRITER NEIL DEGRASSE TYSON SPEAK. DURING HIS REMARKS, TYSON COMMENTED ON THE IMPORTANCE OF EXPONENTIAL THINKING, NOTING, 'LINEAR THINKING PREVENTS YOU FROM IMAGINING THE POSSIBLE FUTURE THAT AWAITS YOU.'

FIRST GLOBAL PARTICIPANTS DO NOT HAVE THIS ISSUE. THEY EMBRACE THE TRANSNATIONAL PROBLEMS WE ALL FACE WITH A RECOGNITION OF THE POWER OF COLLABORATION. **FIRST GLOBAL EMPOWERS OUR YOUNG MINDS TO THINK CREATIVELY** 

AND WITH A SPIRIT OF DETERMINATION. THIS APPROACH WILL ENABLE OUR FUTURE LEADERS **TO COOPERATE** TO SOLVE THE GLOBE'S MOST PRESSING ISSUES AND **BUILD A BETTER FUTURE FOR ALL.** 

THE TULLMAN FAMILY OFFICE IS ON TEAM FIRST GLOBAL ALL THE WAY!

-Cayley Tullman, President, Tullman Family Office, 2024 Diamond Sponsor



THE SPIRIT AND THE DEEP TECHNICAL CAPACITY OF THE STUDENTS WHO



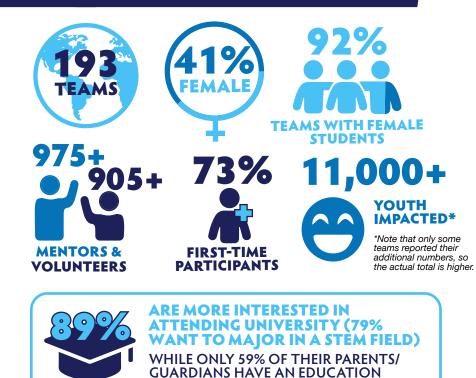
TOOK PART IN FIRST GLOBAL **GIVES HOPE FOR THE FUTURE.** THE CREATIVITY AND DEPTH OF THEIR IDEAS FOR SUSTAINABLE FOOD WAS PHENOMENAL. IT'S SO IMPORTANT THAT FIRST GLOBAL NOT ONLY ENCOURAGE STUDENTS TO GET INTO STEM, BUT THAT THEY ALSO **FOCUS THAT ENERGY TOWARDS SOLVING SOME OF THE WORLD'S MOST PRESSING CHALLENGES.** ATTENDING WAS A HIGHLIGHT OF THE YEAR FOR ME.



-Andy Jarvis, Director, Future of Food; Bezos Earth Fund, 2024 Diamond Sponsor

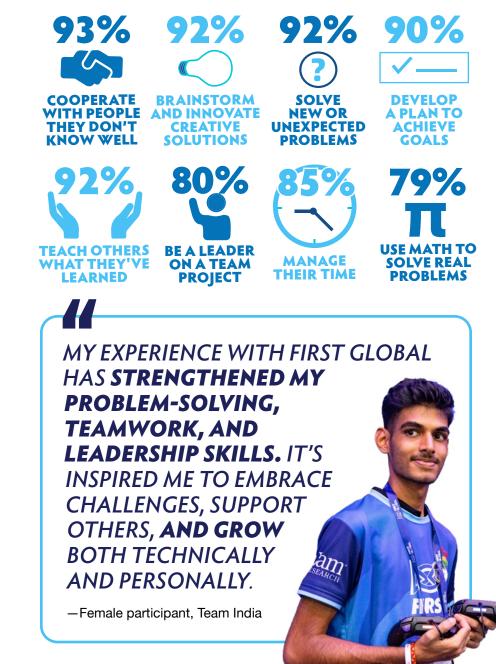


# IMPACT BY THE NUMBERS



**BEYOND SECONDARY SCHOOL.** 

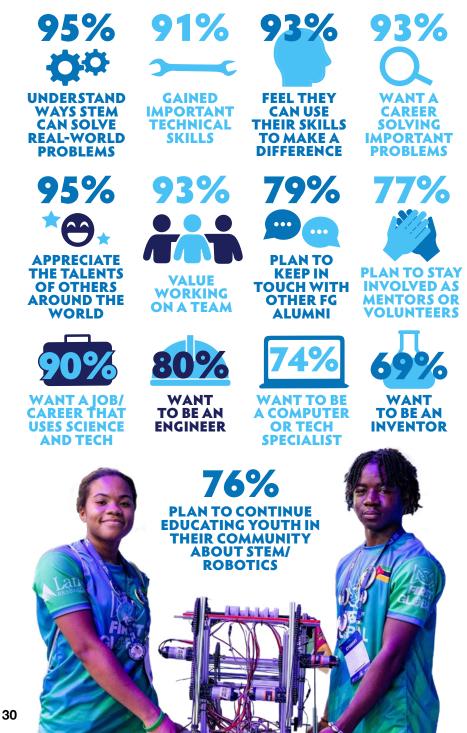
#### **STUDENTS ARE NOW MORE CONFIDENT IN THEIR ABILITY TO:**



EGRO

#### GL⊕BAL

#### **THROUGH PARTICIPATING, STUDENTS:**



THIS EXPERIENCE HAS IMPACTED ME IN MANY WAYS... IT HAS TAUGHT ME THE IMPORTANCE OF COLLABORATING AS A GLOBAL COMMUNITY. WE ARE INDEED THE FUTURE LEADERS AND I AM CERTAIN THAT FIRST GLOBAL HAS BEEN THE VEHICLE FOR RELATIONSHIPS THAT MAY ONE DAY SAVE THIS WORLD.

-Female participant, Team Saint Vincent and the Grenadines





# **BRIDGING DIVIDES** THROUGH THE UNIFYING SPORT OF ROBOTICS

"South Korea and North Korea are really divided. We cannot see each other at all," said Katie, a student on Team Republic of Korea (representing South Korea).

So the last thing anyone would expect is students from both countries working together on the same team.

As part of fulfilling *FIRST* Global's mission to expand STEM education to all of the world's two billion youth, *FIRST* Global Team Republic of Korea reached out to a school in Busan dedicated to educating North Korean refugees now living in the South. There, 18-year-old Juwoong quickly stood out. "When we saw Juwoong's enthusiasm and natural ability with robotics, we knew we had to include him," Katie said. "He was better than many of us who had been working with robots for months."

For Juwoong, joining the team was both exciting and daunting. "I was a little nervous," he admitted. "I felt like I wasn't good



enough... Technology and engineering can be very challenging, especially for North Koreans, who have even less access to it." But Juwoong soon became an integral part of the team, even taking on the critical role of the robot driver tasked with piloting the team's robot during the competition.

"He earned that spot through his skill and dedication," Katie said. "Now, we can't imagine the team without him."

Juwoong sees his participation as an opportunity to represent his peers and advocate for unity. "Right now, we're divided countries, but in reality, we are one nation." he said. "We're still the same Koreans, and we share the same identity...It's just a feeling that we're in this global place with a group that's somewhat unified like us."

The team's aspirations extend far beyond the 2024 competition. They hope to inspire more North Korean students to join their efforts and to eventually see a dedicated North Korean team compete at *FIRST* Global.

"For many North Korean refugees, technology and robotics feel like distant dreams because of limited access," said Joowong. "Being here has shown me that those barriers can be overcome. I hope I can inspire others from my school to believe in their potential."

Through their efforts, Team Republic of Korea embodies the principles of *FIRST* Global and demonstrates that even the

most entrenched divisions can be overcome through collaboration and a shared commitment to building a better future.



# DISPLACED BY CIVIL WAR, UNITED BY STEM

Out of more than 20 students, Team Sudan was down to two.

"My brother and I are the only [students] who were able to make it here," said Maab at the 2024 *FIRST* Global Challenge in Athens.

"In Sudan, we are facing many problems," her brother Mostafa shared. "We have war, we have problems in food, in electricity. **But we want to say to the world that we are strong enough.**"

The civil war in Sudan has displaced over 11.5 million people, including the team's students and mentors. Today, they are scattered across nine countries. With no physical space to gather, the team relied entirely on virtual meetings, taking online courses in mechanics, electronics, and 3D design in order to all be on the same page before coming up with the design for their robot.

Even with all of this preparation, the team didn't receive their robot kit until just days before the competition. While Maab and Mostafa were traveling home from their visa appointment in Qatar, they received word from one of the team mentors living in Saudi Arabia that the kit had arrived, which required a spontaneous meetup that same night. "We literally met at the border in the middle of nowhere desert," recounted Maab.



WE ARE ONE FAMILY WORKING TOWARDS A COMMON GOAL," THE TEAM SAID IN A POST. "WE KNOW THAT SUCCESS REQUIRES SACRIFICE, STRENGTH COMES FROM UNION, AND THAT GREAT ACHIEVEMENTS BEGIN WITH SMALL DREAMS. WE'RE HERE TO GIVE OUR BEST, TO GO BEYOND LIMITS, AND TO PROVE THAT TEAMWORK CAN OVERCOME ANY OBSTACLE.

When Maab and Mostafa made it to the event, the rest of the *FIRST* Global community quickly rallied around them. "Teams from China, Tanzania, Kazakhstan, Libya, and Algeria all helped us," Mostafa said. "Before we came, I thought I was going to be alone, but that's not what happened."

Maab reflected on the deeper meaning of their journey. **"What we've built** here is more than just a robot. I think it's a symbol of resilience and doing it no matter what. Despite everything that's happening, we're here," she said. "It's really worth it because it's



not just my experience—it's mine, my mother's, my father's, everybody who helped us. It's a domino effect."

"I'm not only representing my country," said Mostafa. **"I'm also representing the power of education.** If you believe in yourself and try more and more, maybe you'll go to a place even in your imagination you didn't think about."

# FIRST GLOBAL MENTORS TRANSFORMING LIVES THROUGH COMPASSION

At the heart of *FIRST* Global are dedicated mentors who guide, inspire, and sacrifice to help young people realize their full potential. Their shared mission is clear: to provide opportunities.

Anna Maria, mentor of Team Honduras, recounted words that have stayed with her: "I asked a priest what he needed for his students, and he said, 'Opportunities, Anna Maria. I want opportunities for my kids.'" That vision fuels her work.

In Honduras today, 70% of people live below the poverty line and over 15% of all Hondurans are malnourished. This year, as part of expanding *FIRST* Global's impact to Hondurans of all backgrounds, Anna Maria partnered with El Hogar, a nonprofit

working with youth in vulnerable situations. For these students, robotics practices became more than just lessons—they became a refuge and a space for growth.

One El Hogar student, Henry, emerged as a symbol of this transformation. "When he first came, he would just lay his head down and not participate," the mentor recounted. Yet, Henry's natural aptitude for robotics shone through. "He was one of the first kids to understand new lessons when they were delivered." Slowly, with encouragement, Henry's attitude shifted, and his leadership blossomed.



"It's not just about the robot," Anna Maria said. "It's about finding a solution for our problems. **These kids are amazing – they just need a space where they can let their talents show.**"

Team Haiti's mentor, Jameson, knows firsthand the power of opportunity. **"For us, Haiti is not poor—we just lack resources,"** he said. **"With the right resources, our students can do more than anyone thinks they can do."** 

Team Haiti's journey is about redefining what is possible for a country often underestimated — to prove what they can achieve with the right resources. "Our kids don't take things for granted," Jameson explained. "They will do whatever it takes to get to where they want to be."

The impact Jameson has had on his students is transformative, instilling in them resilience and self-belief. "When there is a problem, I ask them, 'Okay, that's the problem. Now tell me what the solution is,'" he shared. This philosophy has empowered his students to navigate challenges with confidence.

"They learn what it means to fail and try again. **They're learning to be themselves and solve problems, not wait for someone else to do it.** This experience is not just about today—it's about where they are going," he emphasized. Through his guidance, Team Haiti is learning to tackle life's challenges head-on, showing the world—and themselves—what they are truly capable of achieving.

"This is about preparing kids for careers and opportunities that don't yet exist," said Anna Maria. "We're teaching them to find solutions, to work together, and to believe there's always another plan."

# WITH APPRECIATION TO OUR SUPPORTERS

HELLENIC REPUBLIC

Ministry of Digital Governance



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HOW WILL YOU HELP THIS GENERATION OF ROBOTICS ATHLETES CHANGE THE WORLD?

