

2020 Virtual Latin America and Caribbean GLOBE Regional Meeting



THE
GLOBE PROGRAM 

GLOBE and Sustainable Development Goals

Global Education for Sustainable Development

By the US GLOBE Partner in Massachusetts

Global STEM Education Center, Inc

https://www.globe.gov/web/global_stem_education_center

www.globalstemcenter.org

November 19, 2020



Introduction – a few words about my journey



Fellow, Education Policy and Research



Harvard Global Education “Think Tank”



Mountain Climbing



Climbing on Mount Kazbek - 16,512'



CEO, Center for Global STEM Education, Inc. Non-profit 501 (c) (3)



Director, Center for Diversity & Leadership in STEM



Training & Education Senior Specialist
College Relations Manager



Diplomacy 2.0



B.S. Petroleum Engineering,
M.S Petroleum Engineering
M.S Computer Science



US GLOBE Partner

IVSS Judge

GLOBE SRS

GISN



What is Sustainability?



Image Credit: NASA

“Sustainability is the ability to exist constantly. In the 21st century, it refers generally to the capacity for the biosphere and human civilization to co-exist.”

“Achieving sustainability will enable the Earth to continue supporting life.” *

*“Sustainability has become of the defining features of the 21st century reality”;** “Sustainability is an emergent feature of the whole systems.” “It's not so much about the parts as how the parts work together to enable effective overall outcome....” ***

*“Relationship between a whole system and its environment that it can not be achieved through optimizing individual parts, but instead requires us to look at how whole systems work how all the parts are interrelated...to enable sustainable results.” ***

* <https://en.wikipedia.org/wiki/Sustainability>

**Sustainability Documentary (Systems Innovations Channel, Youtube.com <https://www.youtube.com/watch?v=bjrPilem30g>)

SUSTAINABLE DEVELOPMENT GOALS



Sustainable
Development
Goals

<https://unstats.un.org/sdgs/>



GLOBE Diversity, Equity and Inclusion SDGs Goal #4 and Goal #5

- *“Our mission is to empower learners around the world as diverse individuals and promote scientific inquiry, literacy, and action with cultural awareness. We will strive to understand and appreciate the interdependence of humanity, cultures, and the natural environment and promote accountability based on our core values. GLOBE will foster collaborations among diverse individuals and institutions to build and sustain a diverse, just, equitable, and inclusive program”.*

Goal #4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal #5 Achieve gender equality and empower all women and girls



GLOBE and
SDG Goal #6
Clean Water
and
Sanitation



GLOBE Trees and Goal #15

- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



A screenshot of the GLOBE Observer website. The header includes 'THE GLOBE PROGRAM' and 'GLOBE Observer' with a magnifying glass icon. Navigation links include 'Get the App', 'Do GLOBE Observer', 'Lead a Program', 'Get Data', 'News, Events, and People', 'Publications', 'About', and 'Search'. The main content area is titled 'GLOBE Trees' and includes a 'Resource Library' section with a paragraph about tree height measurements and carbon storage. Below this are links for 'Activities', 'Books, Videos and', and 'Printables and Promotional'. A small circular graphic on the right shows a globe with a tree, sun, and clouds.



NASA scientists study trees from space using satellites like ICESat-2, which measures forests using lasers. Your tree height and circumference measurements can help scientists understand how carbon moves through ecosystems.



SDG Goal #2
SDG Goal #3
SDG Goal # 15

• *Data collection of SOIL temperature, moisture, and physical and chemical properties is invaluable to scientists in many fields*

3 GOOD HEALTH AND WELL-BEING



THE GLOBE PROGRAM

11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



GLOBE Atmosphere and SDGs Goals #3, #11, #12



SUSTAINABLE DEVELOPMENT GOALS



SDG #3: For mosquito disease where there is no vaccine, there are three ways to protect a community: education, surveillance, and breeding site elimination. The app does all three!

GLOBE Mosquito Habitat Mapper and SDG Goal #3*

(* see full PPT by Dr. Rusty Low on this topic presented at GLOBE LAC on November 19, 2020)



GLOBE and SDG Goal #17 Partnership for the Sustainable Development Goals



ME SDGS HLPF STATES SIDS UN SYSTEM STAKEHOLDERS TOPICS PARTNERSHIPS RESOURCES ABOUT



ACCELERATING AND SCALING UP EFFECTIVE PARTNERSHIPS FOR ALL STAKEHOLDERS TO DELIVER TRANSFORMATIONAL IMPACT FOR THE SUSTAINABLE DEVELOPMENT GOALS



**PARTNERSHIP
ACCELERATOR
2030 AGENDA**
FOR SUSTAINABLE DEVELOPMENT



**PARTNERSHIP
PLATFORMS FOR
THE SUSTAINABLE
DEVELOPMENT
GOALS**



**PARTNERSHIP
ACCELERATOR
2030 AGENDA**
FOR SUSTAINABLE DEVELOPMENT

LEARNING FROM
PRACTICE



GLOBE partnerships around the world

Thanks to our GLOBE partners around the world.





GLOBE: Supported by Science; Driven by Data

REGION	Number of countries entering data from 1 May 2019 through 30 June 2020	Total number of measurements entered by 30 June 2020	Total number of measurements entered from 1 May 2019 through 30 June 2020	Total number of measurements entered by citizen scientists orgs from 1 May 2019 through 30 June 2020
Africa	18	1,098,818	73,059	1,169
Asia and Pacific	13	2,226,813	813,982	28,367
Europe and Eurasia	42	73,296,856	4,058,299	19,030
Latin America and Caribbean	20	1,328,395	103,546	6,468
Near East and North Africa	11	1,598,232	401,819	1,328
North America	2	130,0513,889	17,338,245	90,309
TOTAL	107	210,063,003	22,788,950	146,671



GLOBE Partnerships: Supported by Science; Driven by Data



NASA, UNEP and GLOBE



THE **GLOBE PROGRAM** 



SUSTAINABLE DEVELOPMENT **GOALS**



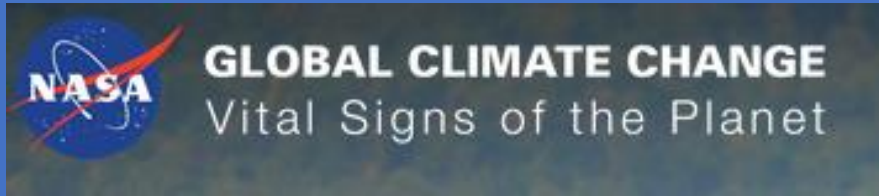
NASA and the United Nations Environmental Programme (UNEP) are pleased to announce an agreement to work together on the promotion and implementation of GLOBE and UNEP activities.

- environmental education and training
- collection and distribution of environmental data.
- share education and training resources
- Broaden awareness of SDGs and GLOBE Program



“NASA is pleased to partner with UNEP to enhance environmental education and training and to open up new prospects for the collection and use of environmental data,” Dr. Allison Leidner

(* see full PPT by Dr. Rusty D. Low on this topic presented at GLOBE LAC on November 19, 2020)



NASA Climate Change

This is a GLOBAL problem

<https://climate.nasa.gov/>

“Scientific evidence for warming of the climate system is unequivocal.”

- Intergovernmental Panel on Climate Change



GLOBAL CLIMATE CHANGE
Vital Signs of the Planet
Sep 07 2020

FACTS ARTICLES SOLUTIONS EXPLORE RESOURCES NASA SCIENCE

NEWS
2020 Arctic Sea Ice Minimum: Second Lowest on Record
This year's Arctic sea ice cover shrank to the second lowest extent since modern record-keeping began in the late 1970s, at 1.44 million square miles (3.74 million square kilometers).
[FULL STORY](#)

INDICATOR	VALUE	UNIT
CARBON DIOXIDE	↑ 414	parts per million
GLOBAL TEMPERATURE	↑ 2.0	°F since 1880
ARCTIC ICE MINIMUM	↓ 13.1	percent per decade
ICE SHEETS	↓ 427	billion metric tons per year
SEA LEVEL	↑ 3.3	millimeters per year

“A framework of indicators and statistical data to monitor progress, inform policy and ensure accountability of all stakeholders.”



The global indicator framework for Sustainable Development Goals was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and agreed upon at the 48th session of the United Nations Statistical Commission held in March 2017.

*“A robust follow-up and review mechanism for the implementation of the 2030 Agenda for Sustainable Development requires a solid framework of indicators and statistical data to monitor progress, inform policy and ensure accountability of all stakeholders. The global indicator framework was adopted by the General Assembly on 6 July 2017 and is contained in the **Resolution adopted by the General Assembly on Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development**”*

Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development <https://undocs.org/A/RES/71/313>

<https://unstats.un.org/sdgs/indicators/indicators-list/>

GLOBE scientific data, SDGs Indicators and GLOBE Project –based learning (PBL)

United Nations » Department of Economic and Social Affairs » Statistics Division

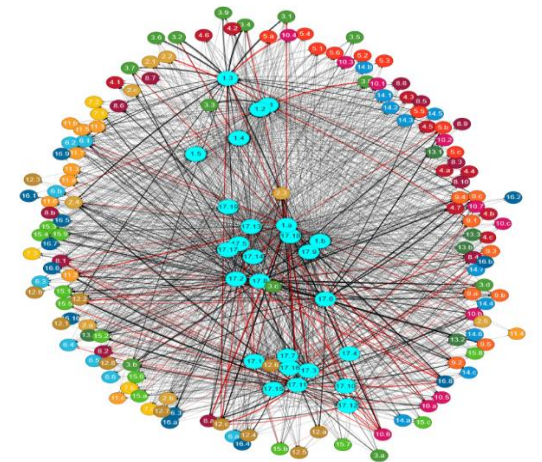
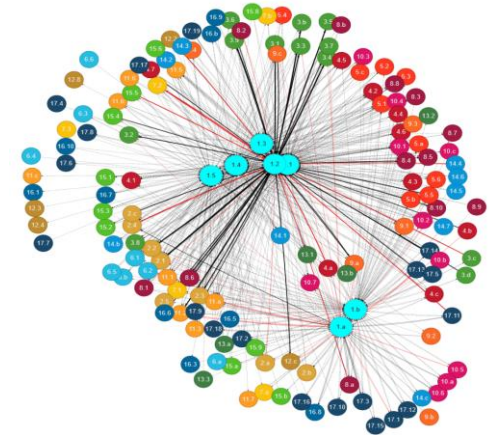


[HOME](#) [NEWS](#) [HLG-PCCB](#) [IAEG-SDGs](#) [EVENTS](#) [SDG INDICATORS](#) [REPORTS](#) [UNCT TOOLKIT](#)

SDG Indicators

Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development

The global indicator framework for Sustainable Development Goals was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and agreed upon at the 48th session of the United Nations Statistical Commission held in March 2017.

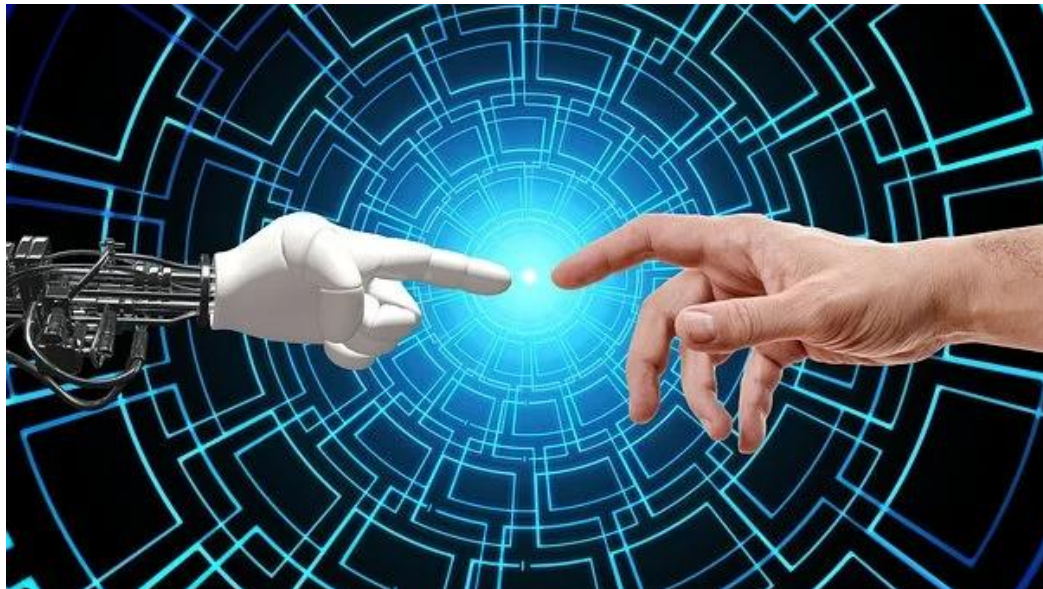


Data Science For Educators, Big Data Data Analytics, Artificial Intelligence

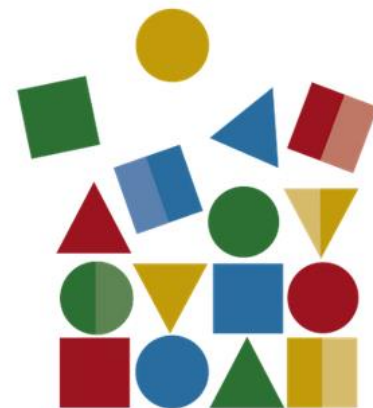
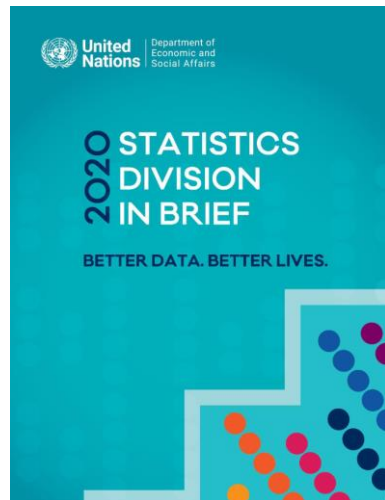


THE
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- Artificial Intelligence/Machine Learning
- BIG Data, Data analytics
- “Deep Learning”



How can we make sure our data is trustworthy?



2020 VIRTUAL
United Nations
**WORLD
DATA
FORUM**
19-21 OCTOBER



<https://unstats.un.org/home/documents/brochures/2020-UNSD-Brochure.pdf>

<https://unstats.un.org/unsd/undataforum/index.html>

Data governance for monitoring the SDGs

Skills for successful global collaboration

- Cross-cultural communication skills
- Excellent networking abilities
- Collaboration
- Teamwork and cooperation
- Interpersonal influence
- Adaptive thinking
- Emotional intelligence
- Resilience
- Leadership and responsibility
- Assertive communication
- Cultural Intelligence
- Trust and an ability to build and maintain trustful relationships



Global Competency, Intercultural Communication Skills, Teamwork skills for building strong partnerships (PD for teachers)

81 40 20 91 69 52 82 46 24 26 87 68

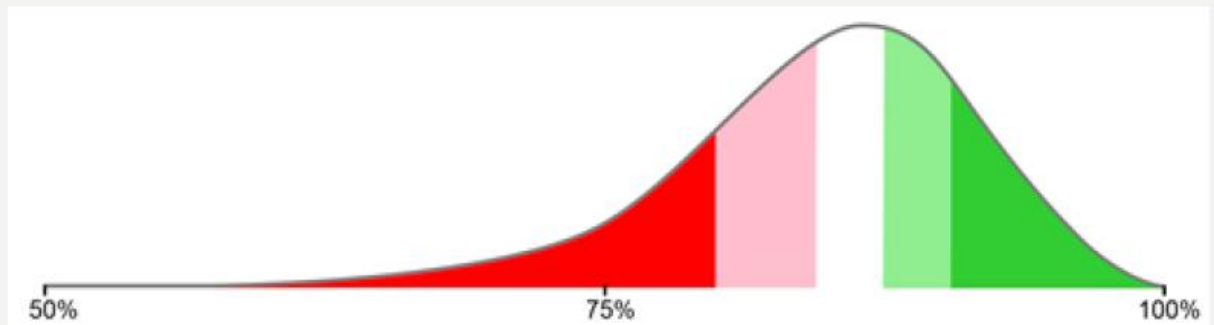
PDI IDV MAS UAI LTO IVR

Click the button above for further information

Power Distance

How is power divided?
How should it be distributed?
How a society handles inequalities among people?

High PDI	Low PDI
<ul style="list-style-type: none">• High dependence needs• Inequality accepted	<ul style="list-style-type: none">• Low dependence needs• Inequality minimized



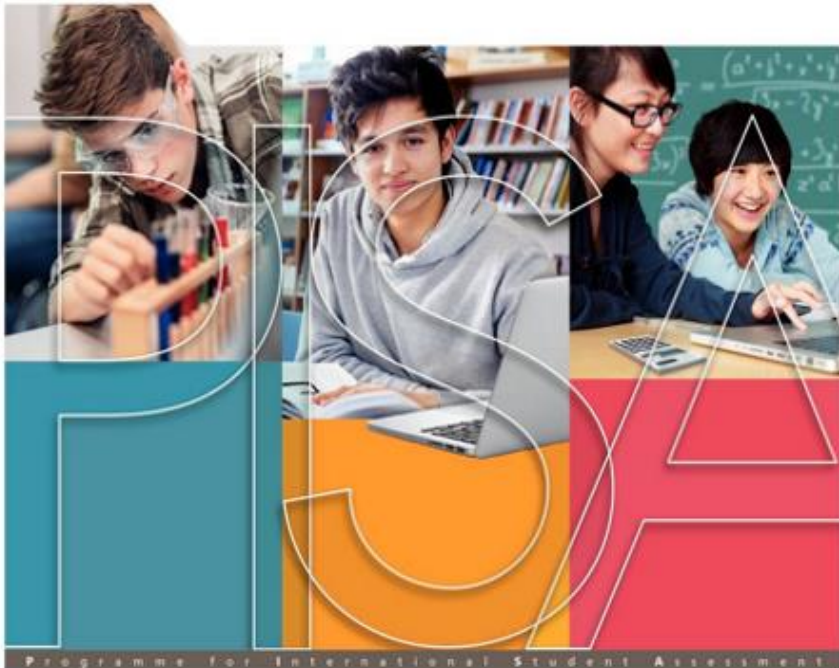
Additional Resources



PISA 2018 Results

ARE STUDENTS READY TO THRIVE IN AN INTERCONNECTED WORLD?

VOLUME VI



Programme for International Student Assessment

Thriving in an interconnected world

In our interconnected world the ability to live and work together with other people, who may think differently or have a different background to us, is vital for success.

Many students want to learn about other cultures and people who are different to them

In response to the statement "I respect people from other cultures as equal human beings"

82% agreed

18% disagreed

Around 4 in 5 or more students were in schools

whose curriculum covered global issues, such as climate change and epidemics

Students who had positive attitudes

Girls reported greater respect for people from other cultures than boys

as did advantaged students compared to their disadvantaged peers

Many students reported supporting sustainability and intercultural understanding

However, this is mostly done through simple actions requiring neither time nor money

71%



Discussion Questions

Discussion questions are provided as guidelines to help introduce the issues related to diplomacy. Discussion questions are divided into eight general categories that align with the U.S. National Social Studies Standards. The Diplomacy 101 section of the website will guide you in exploring these questions.

DIPLOMACY 101

DIPLOMACY EXPLORER

Introductory Questions



The work of the State Department and diplomacy affects everyone, everyday. Discover more about the State Department and the work of U.S. diplomats by exploring below.

Gracias!



Gracias!



GIO staff plus U.S. Country Coordinator Jen Bourgauff, International Coordinator, Lyn Wigbels, not shown



Participants at the 2019 Regional Meeting: Atal, Brazil



Participants at a GLOBE workshop: Envigado, Colombia



Latin America and Caribbean



Participants at a GLOBE workshop; Santiago, Chile



2020 Virtual Latin America and Caribbean
GLOBE Regional Meeting November 18-20,2020



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THANK YOU! GRACIAS!

From the US GLOBE Partner in Massachusetts

Global STEM Education Center, Inc

https://www.globe.gov/web/global_stem_education_center

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Work Cited

- **Sustainable Development Goals** <https://unstats.un.org/sdgs/>
- **SDGs Partnership Accelerator** <https://sustainabledevelopment.un.org/PartnershipAccelerator>
- **UN Partnership Platforms for the SDGs**
https://sustainabledevelopment.un.org/content/documents/2699Platforms_for_Partnership_Report_v0.92.pdf
- **Sustainability Documentary (Systems Innovations Channel, Youtube.com)** <https://www.youtube.com/watch?v=bjrPilem30g>
<https://www.youtube.com/channel/UCutCcajxhR33k9UR-DdLsAQ>
- **SDG Interlinkages Analysis & Visualization Tool (V3.0)** <https://sdginterlinkages.iges.jp/publications.html>
- Dr. Hofstede “National Culture” <https://hi.hofstede-insights.com/national-culture>
- **Dr. Pellerin “How NASA Build Teams”** <https://amzn.to/2IQn4BP>
- PISA (Global Competence) 2018 <https://www.oecd.org/pisa/pisa-2018-global-competence.htm>
- GLOBE developed a chart aligning GLOBE protocols to SDGs:
- <https://www.globe.gov/documents/10157/18287328/The+Global+Goals+for+Sustainable+Development.pdf/37e38100-1bd8-4be4-a114-47ccee174538>
- <https://www.unitar.org/event/es/full-catalog/cifal-merida-alianza-para-promover-los-ods>