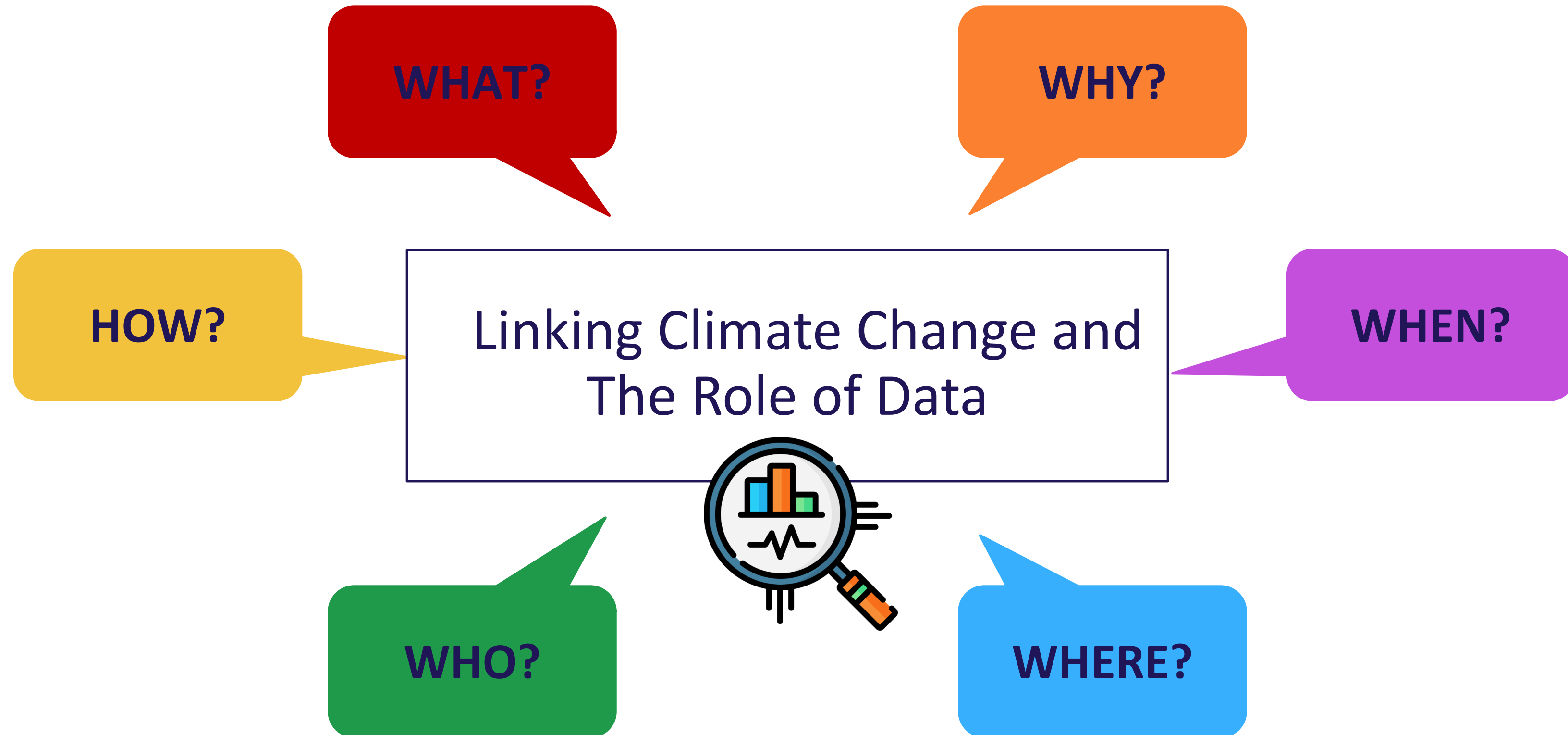


The Role of Data in Monitoring, Predicting and Mitigating the Impact of Climate Change

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What?: The Challenge of Climate Change



The old
image of
climate
change





Extreme Weather Events



Heatwaves beyond human survival



In the coastal cities of the Gulf the temperature will reach 45° C in the usual summer case and 60° C in occasional instances

What happened on July 28,
2022?



This year, Earth Overshoot Day fell on July 28

Earth Overshoot Day marks the date when humanity has used all the biological resources that Earth regenerates during the entire year.

Source: Global Footprint Network, 2022

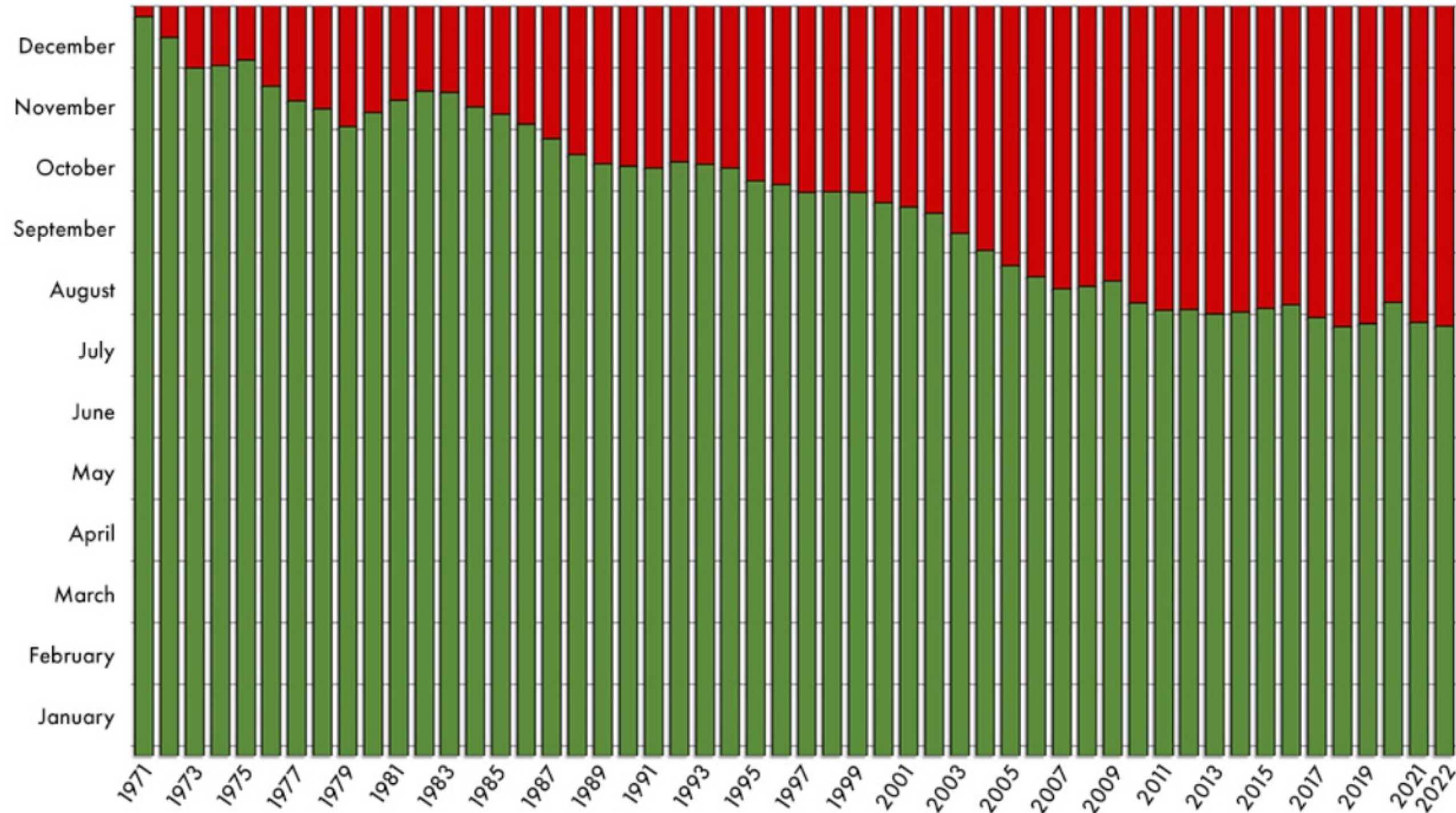


1 Earth

Earth Overshoot Day 1971 - 2022



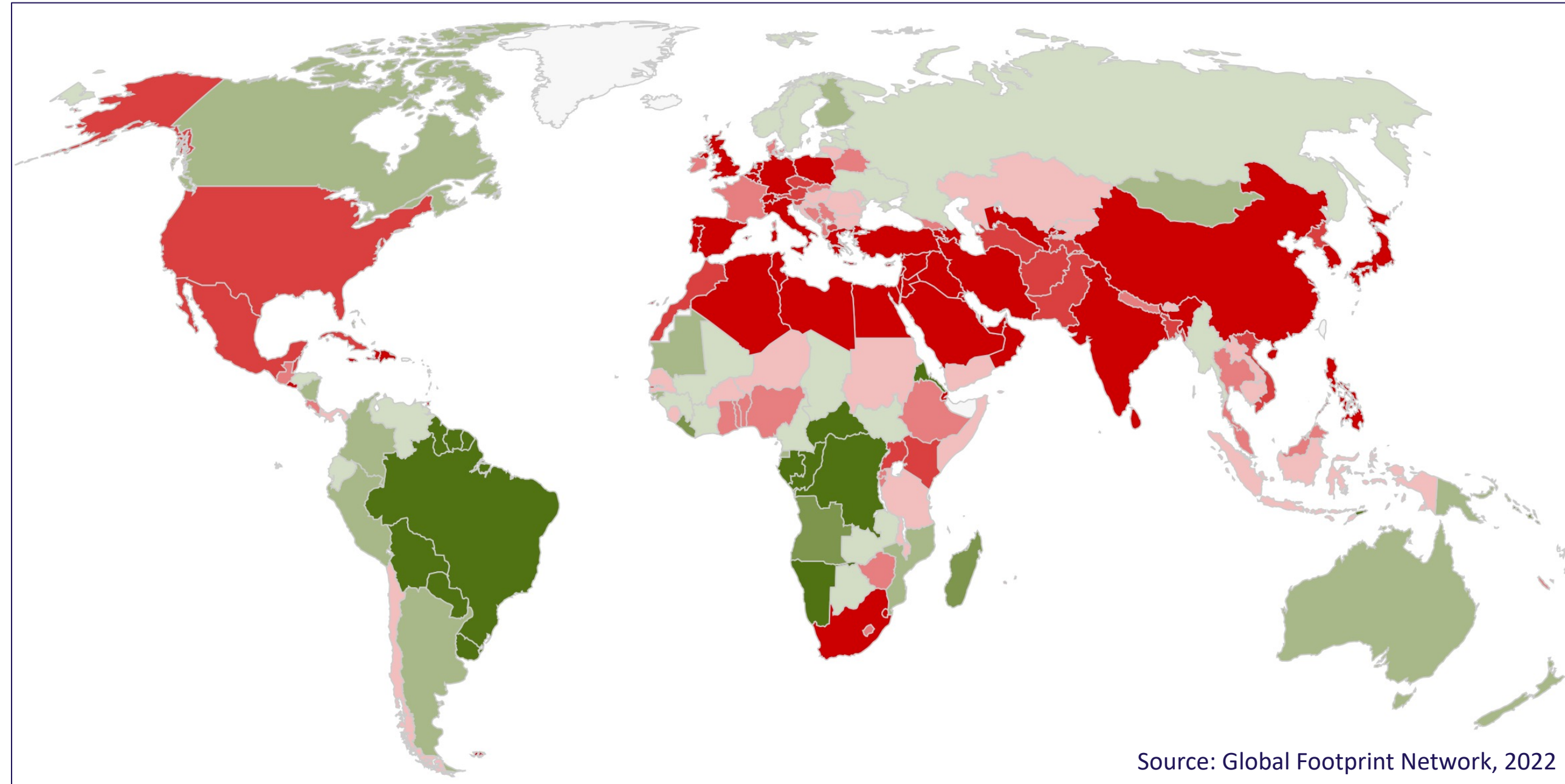
1.75 Earths



Source: National Footprint and Biocapacity Accounts 2022 Edition
data.footprintnetwork.org

Where?: Focusing on MENA Region

ECOLOGICAL DEFICIT/RESERVE



- An ecological deficit occurs when the Ecological Footprint of a population exceeds the biocapacity of the area available to that population.
- An ecological reserve exists when the biocapacity of a region exceeds its population's Ecological Footprint.

Where?: Focusing on MENA Region

- Diverse environmental impacts of global warming, will highly disrupt agriculture by land, quantity, and quality.
- As the region gets significantly **drier** and **warmer**, freshwater **scarcity** will increasingly deprive MENA of **water** and **food** by both quantity and quality.



Where?: Focusing on MENA Region

- Climate change can escalate pre-existing **social, economic** and **environmental** problems.

Example:

- With **desertification** on one hand, and **sea level rise** on the other, climate change's destructive effects will lead **450 million people**, globally, to migrate from rural to urban areas by 2050 due to scarce land resources.
- Only **1 meter** sea level increase is expected to result in **6 million migrants** currently living in the Nile delta region.



Where?: Focusing on MENA Region

Identified as one of the most affected regions by global warming, for the MENA region, climate change is a matter of **survival**.

Why Data Matters?

Addressing the problem of climate change will require clear, reliable, and transparent data on the levels of compliance with greenhouse gas (GHG) emission reduction and adaptation standards, and information on penalties assessed for non-compliance.

Why enhancing the gathering and collation of accurate and reliable statistical data on GHG emissions matters?

Why Data Matters?

1. Setting Standards:

- Data can help specifying the standards for reduction targets and non-compliance
- It is important to DEFINE and IDENTIFY clearly adaptation and mitigation strategies as well as measurements
- The use of indicators and common metrics is important
- Example: What is sustainability?

Why Data Matters?

2. Detecting and Monitoring Compliance:

- Apart from their informational value for regulators and the general public, statistical data on emission reduction can serve the purpose of evaluating and monitoring the practical impact and effectiveness of climate law and policy.
- Comprehensive data collection by key stakeholders can reveal the level of compliance under applicable laws.
- Local communities can have a reference point for who is complying and who is not.

Why Data Matters?

3. Offering a Baseline:

- Every emission reductions program must determine a “baseline” or “reference level” against which performance and impact are measured periodically.
- Without benchmarks, data and measurement the level of progress cannot be evaluated.
- For climate change mitigation and energy transition, it is crucial to have a holistic baseline representing the systems as of today, including all the assets that are present in the country (emissions, consumption, demand, population, growth, transportation, cooling, etc). Only then we can look at the future and build scenarios.

Why Data Matters?

4. Informed Policy, Planning and Investments:

- Reliable and consistent data can:
 - identify gaps, needs and capabilities
 - improve evidence-based policy-making and efficient allocation of resources
- Such data can enable ministries, government agencies and business enterprises to design and implement their climate mitigation programs in an informed manner.
- Example:
 - Climate data and analytics is vital for investor decision-making.
 - Standardized data gives a baseline to the investors against which they can mobilize their resources and accelerate transition to sustainable systems.

How?

1. Cooperation and Coordination:

- The long-term target of decarbonization is a complex task which requires the involvement of different sectors.
- The progress is highly dependent on how different sectors are interacting and coordinating their needs, innovations and technologies to reduce emissions.
- Knowledge and information sharing between relevant regulators, institutions and key stakeholders is important.
- It is essential to dismantle institutional constraints on knowledge sharing, coordination, and cooperation among stakeholders and regulatory agencies.
- Connecting facility level, sectoral level and national level is vital in Measurement, Reporting, and Verification (MRV) .

How?

2. Localization:

- Climate change causes unique challenges across different localities.
- While globally standardized data is important for setting the standards and benchmarking, data collection should be enhanced with local components, local tools and local expertise.
- Localization can offer benefits in revealing context-dependent challenges and needs, and inform policy-making accordingly.

How?

3. Regulation:

- There is a need for specific regulations and policies that require proactive reporting within clear and specific time frames.
- Such regulation should elaborate the type and level of information to be provided.
- Penalties and sanctions should be specified for late, erroneous, or fraudulent reporting.
- Specific guidelines on the language and format of such reports should be clearly identified in order to ensure their accessibility for local communities.

How?

4. Increased transparency and access to data:

- The lack of transparent and accessible statistical data can render the study of national, cross-sectoral snapshots in climate change mitigation very challenging.
- Establishing searchable online enforcement and compliance databases that provides clear and transparent information on emissions, programs implemented to enhance mitigation and penalties levied on defaulters can be part of solution.
- Introducing **incentives** to increase the willingness to share information and raising **awareness** on the importance of transparent disclosure of relevant data can also enhance effective reporting.

How?

5. Tools and Technology:

- Despite the systemic importance of data in monitoring, predicting and the impact of climate change, lack of equitable access to data monitoring technologies hinder the availability of verifiable and reliable statistical data on climate change impacts and responses across the world.
- There is a need for governments and regulators to invest in modern technology infrastructures that will improve and modernize data collection and information sharing.
- Tools and technologies should be:
 - user-friendly
 - technically feasible
 - economically cost effective
 - in line with overall mitigation strategies

Who?

- Measurement, Reporting, and Verification (MRV) is not only about data. It also requires coordination between the actors.
- Comprehensive data collection by **key actors** such as oil and gas industries, cement and construction industries, electricity or transportation sectors can enhance MRV.
- **Statistical authorities** can play a key role in increasing training and capacity development on reporting and data collection.
- **National regulators** can enforce data reporting and verification requirements.
- **International development agencies** can address systemic barriers to the flow and absorption of data collection technologies that can enable statistical authorities across the MENA region to better detect, monitor, and measure the GHG emission practices.

When ?

The importance of **regular** and **consistent** reporting:

- The measurement of emissions and mitigation efforts should be a continuous process to assess the pace of progress, to develop plans and to measure the impact of the plans.
- Timely and proactive reporting of data is key to enable informed research, investments and decision-making in policy.

Conclusion

- There is a need for increased international cooperation to address barriers to data collection, verification, and monitoring on climate change in developing countries, especially in the MENA region.
- International development agencies have key roles to play in providing technical assistance to address barriers to the flow and absorption of remote sensing technologies that can enable statistical authorities across the MENA region to better detect, monitor, and measure the GHG emission practices of operators.
- On the other hand, statistical authorities across the MENA region have key roles to play in increasing training and capacity development on the deployment of such climate technologies.

شكرًا

Thank you

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والتنمية المستدامة

