A COMMUNITY OF THE FUTURE FOR HUMANITARIAN ACTION

RHIANNAN PRICE, NASA LIFELINES

July 14, 2015
Dogleg Strait, Papua New Guinea

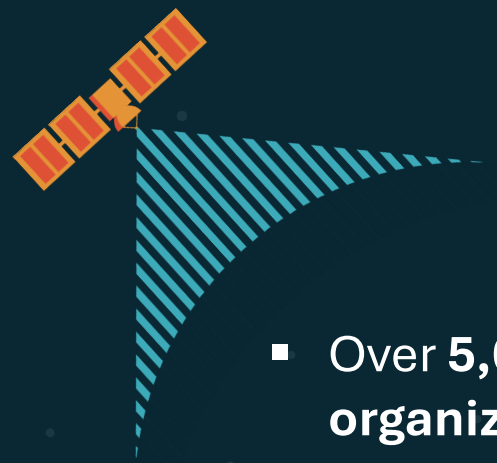
The right people working together at the right time can accomplish incredible things.

When wielded for humanitarian purposes, satellites can save lives and alleviate suffering.

our mission:

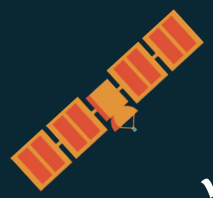
NASA Lifelines is a community of the future using satellite data and tools to improve humanitarian action.

There is still significant unrealized potential for Earth science to help humanitarians save lives and reduce human suffering.



- Over **5,000 humanitarian organizations** globally **serving 362 million people** currently experiencing humanitarian emergencies
- Only **1% of humanitarian aid budgets** go towards innovation
- **500 humanitarian applications** already powered by Earth science and growing demand for satellite-derived data across sectors and geographies

How do satellites help humanitarian missions?



- ✓ coverage
- ✓ objectivity
- ✓ repeatability
- ✓ detail
- ✓ speed
- ✓ affordability

- ✓ More timely decision-making through real-time and predictive modelling
- ✓ Decision-making supported by greater accuracy of data
- ✓ Greater confidence in the decision-making process
- ✓ Greater accountability across stakeholders

How are humanitarians using satellite data?

Damage and needs assessments

Population mapping

Population migration

Refugee camp mapping

Access to local food

Access to health services

Risk exposure to hazards

Predicting disease outbreaks

Urban heat resilience

Planning evacuation routes

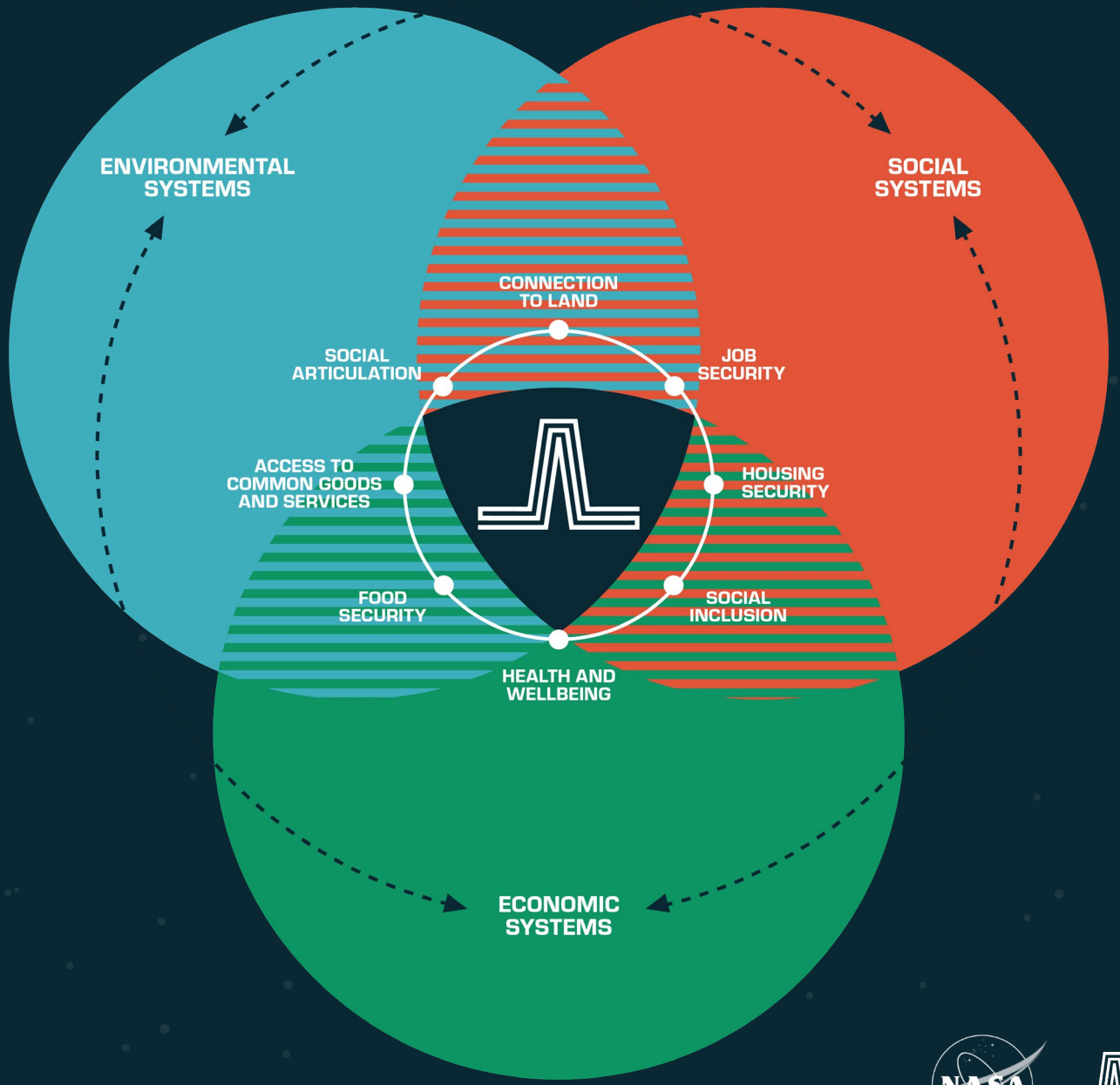
Prosecuting human rights abuses

Access to clean water and air

Coastal resource mapping

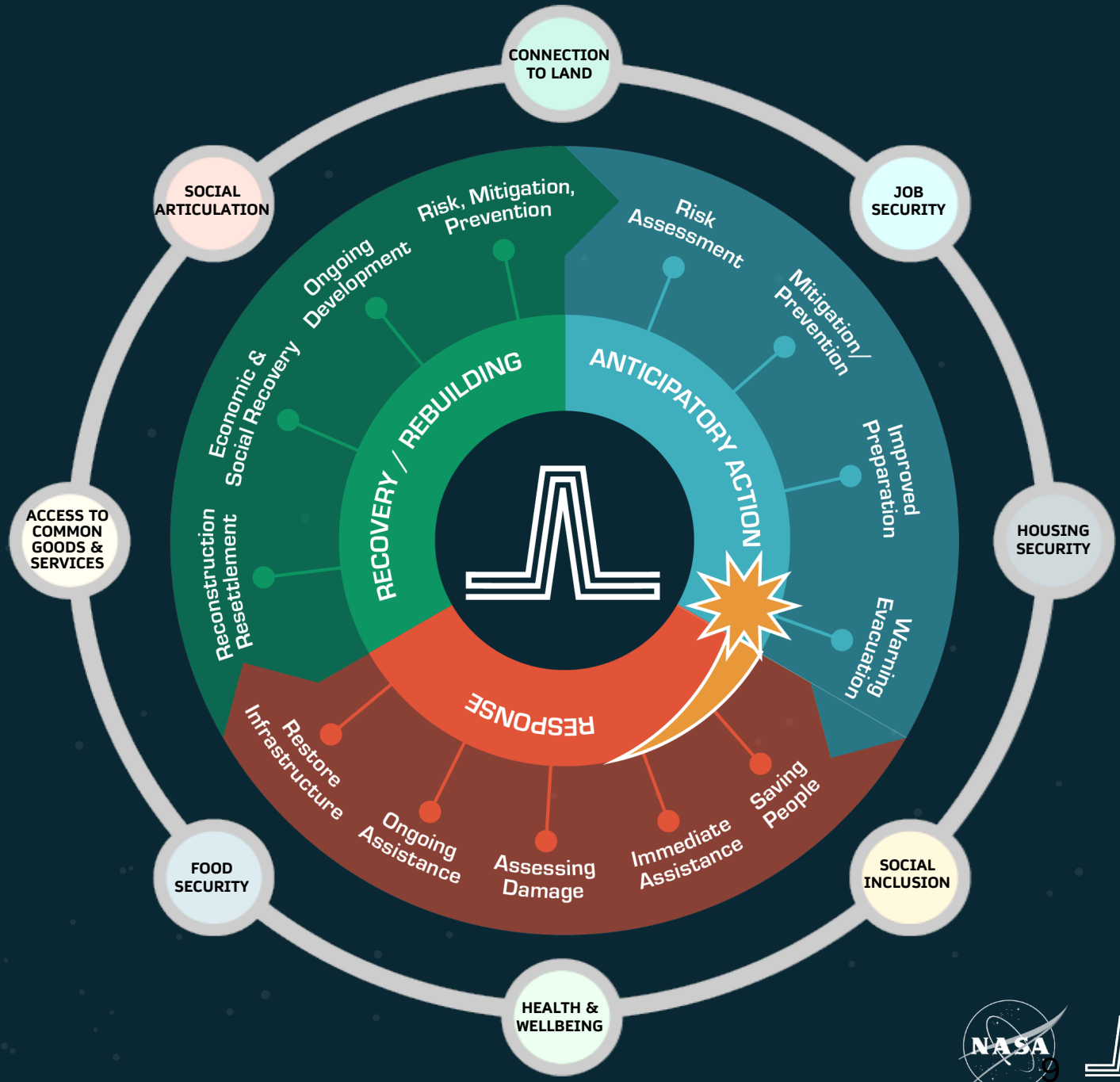
Shelter planning

And many more use cases

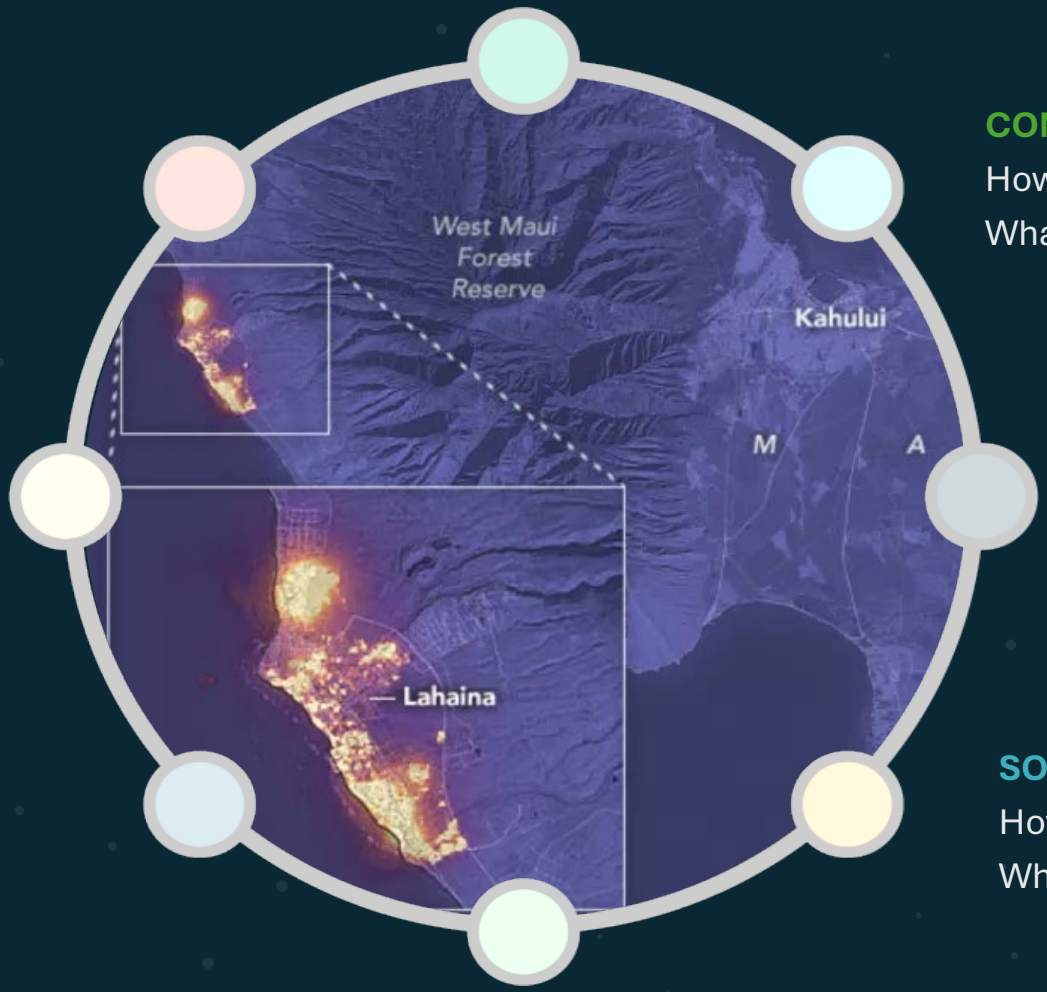


Earth science is a lens that helps truly understand system complexity against the timeframes and phases of a humanitarian crisis.

Environmental, social, and economic systems, and the related community indicators of success from job security to health and wellbeing to connection to land, are all dimensions that can be observed and modeled using Earth science. These are the foundational elements of community resilience and areas where improved humanitarian information is needed.



Earth Science in Action: Maui Wildfires



CONNECTION TO LAND

How do we monitor vegetation encroachment on transmission lines?

What natural resources and infrastructure are at risk during an event?

HOUSING

How do I best take care of property to prevent wildfire spread?

Which properties are at risk during an event?

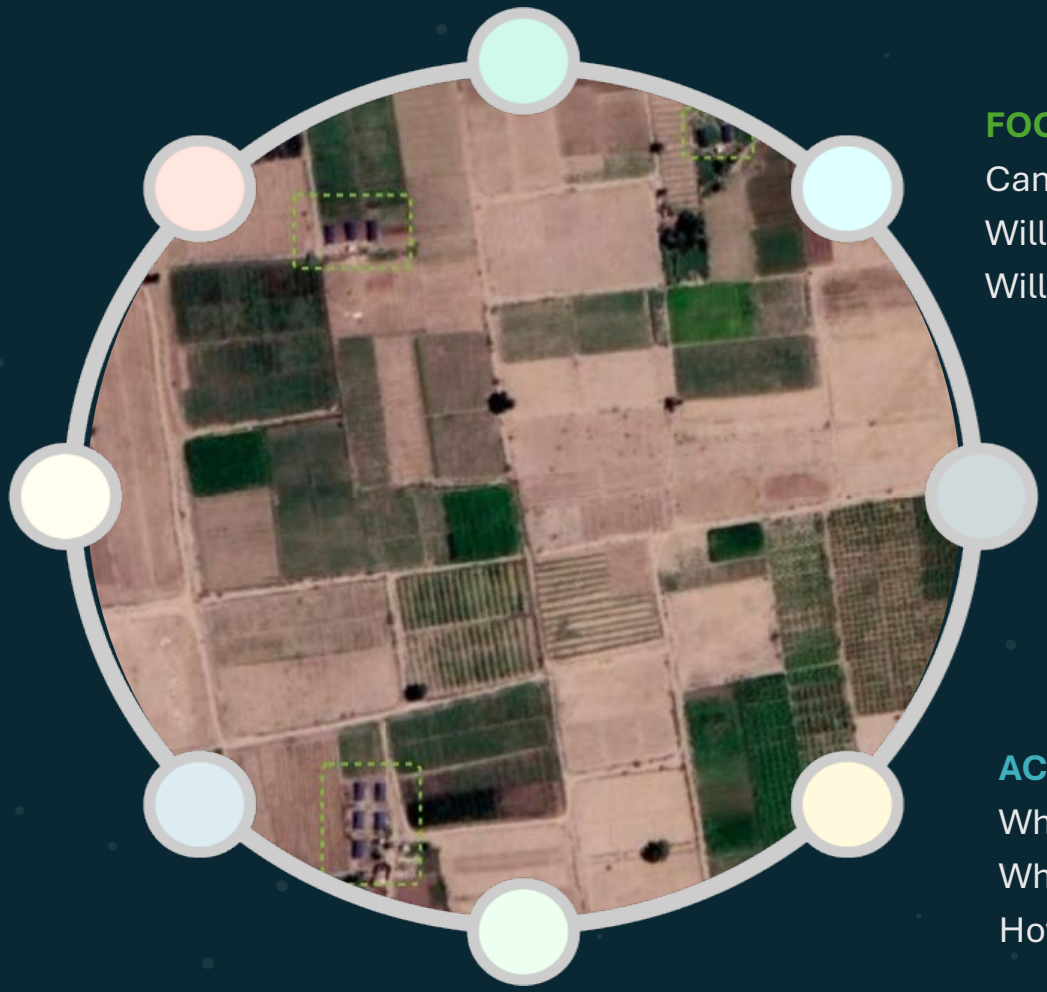
Which properties have been damaged and how badly?

SOCIAL ARTICULATION

How can data build trust across stakeholders?

Which communities are most affected and should inform priorities?

Earth Science in Action: Yemen crisis



FOOD SECURITY

Can the soil tolerate such heavy rains after long periods of drought?
Will flooding from disasters inundate staple crops too long?
Will farmers have access to their fields?

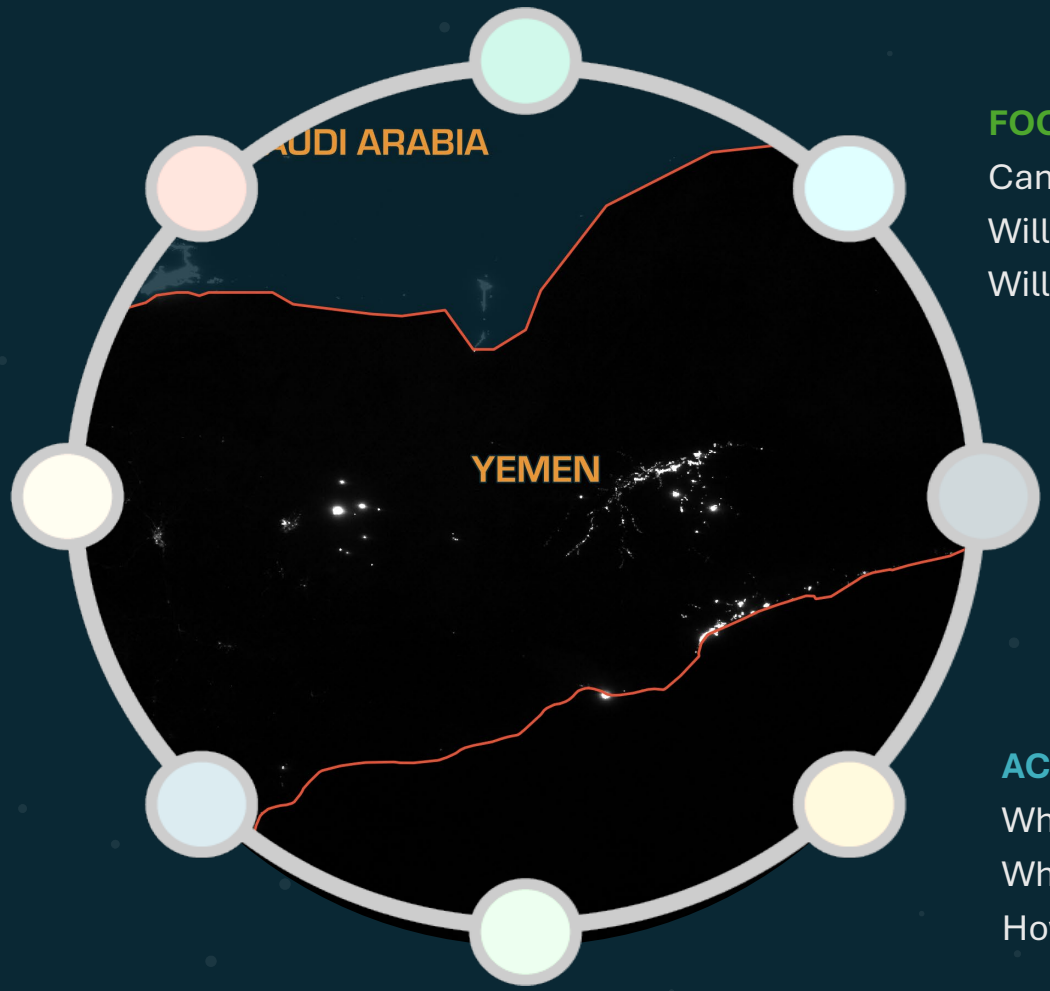
HEALTH & WELL BEING

What is the risk of a cholera outbreak?
Which populations are most vulnerable?
How should healthcare resources be distributed?

ACCESS TO COMMON GOODS & SERVICES

What water sources are at risk of spreading illness?
What communities have access to clean drinking water?
How to provide clean drinking water to vulnerable populations?

Earth Science in Action: Yemen crisis



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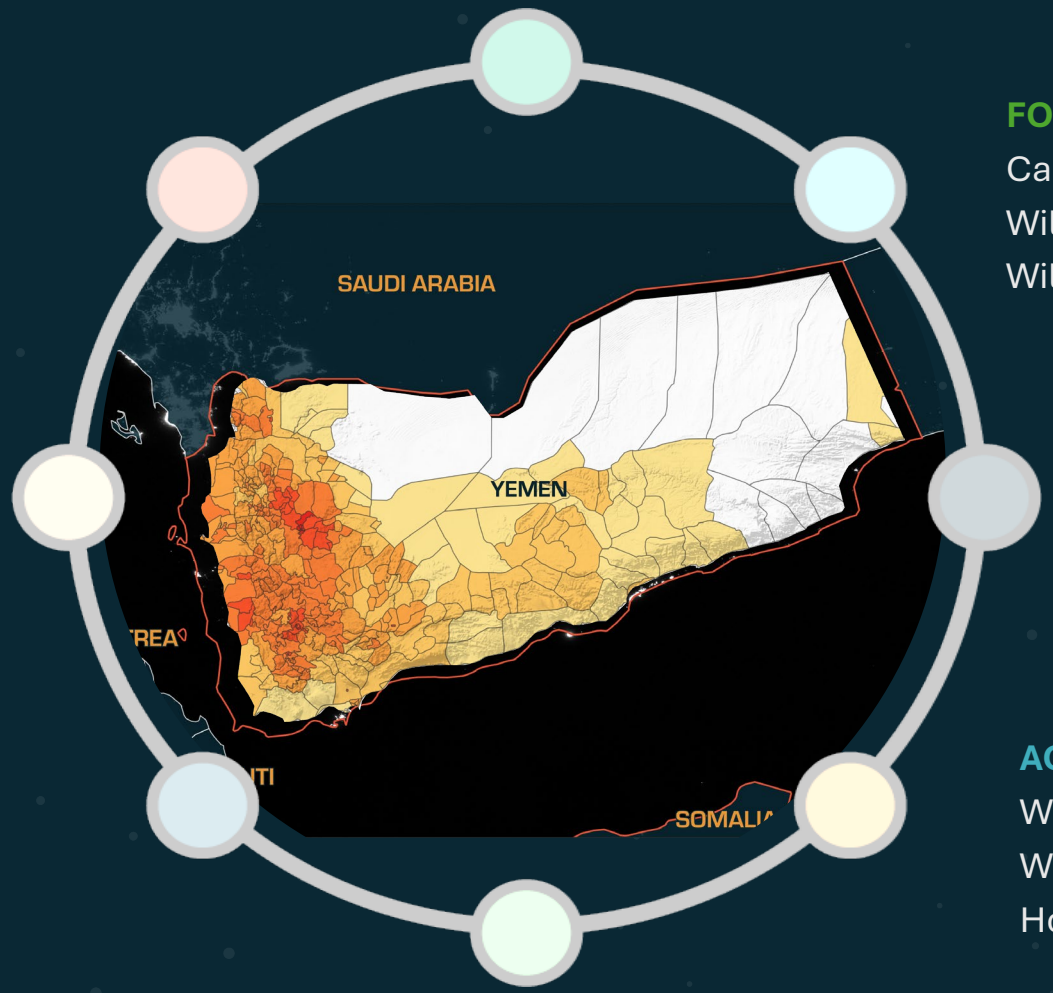

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GIS ANALYSTS
AGRONOMISTS
OCEANOGRAPHERS
SPATIAL EPIDEMIOLOGISTS
AI/ML ENGINEERS
STATISTICIANS
EARTH SCIENTISTS
FRONTLINE WORKERS
POPULATION MODELERS
ECONOMISTS
POLITICAL SCIENTISTS
CONSERVATIONISTS
JOURNALISTS
URBAN PLANNERS
SOCIOLOGISTS
METEOROLOGISTS

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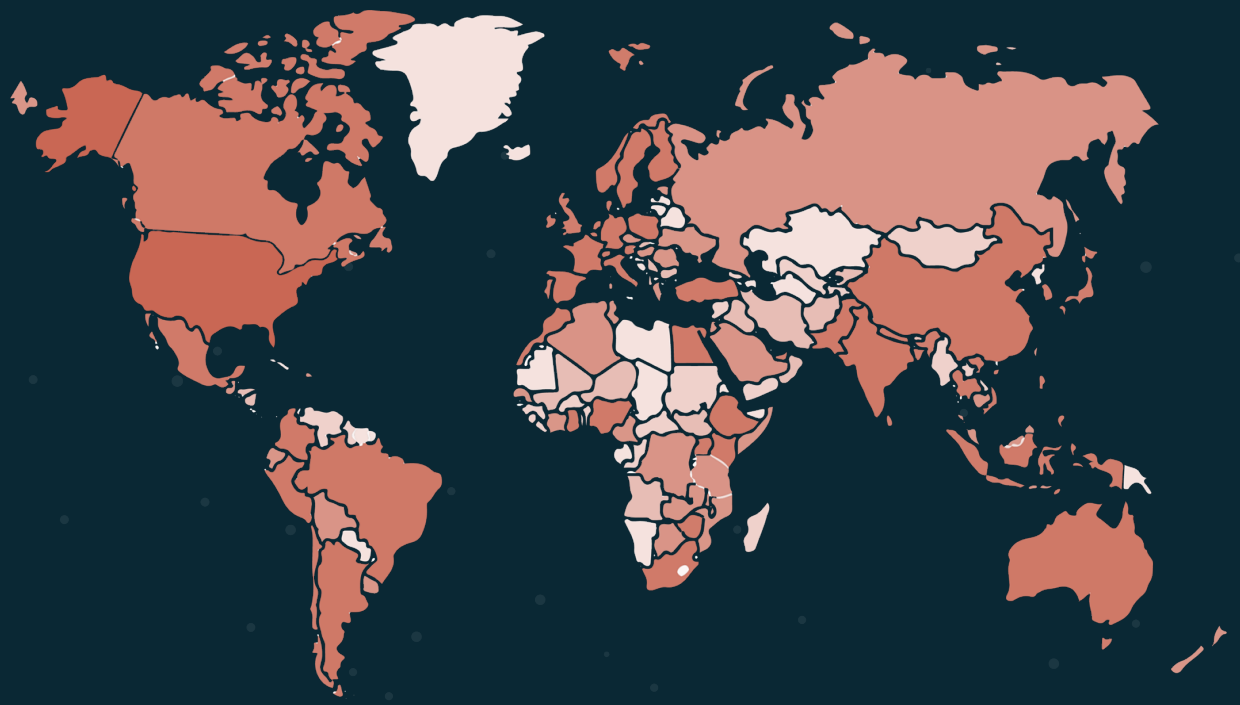
COMMUNITY



Map 1. Country Representation in NASA Lifelines Community. These are the countries where folks reside who have visited our website and signed up for our programs.

143
Countries represented

14
Countries on IRC Watchlist where NASA Lifelines community is represented

17,722
visitors to website

734
Program sign-ups

10
Community building programs launched

50+
Humanitarian organizations already engaged

SUPPER CLUBS

Our Supper Clubs bring together small groups of experts for informal discussions over a meal. Topics range from any numbers of themes relating to humanitarian action using satellite data.

May 15&16	**@SatSummit**
June 19&20	**@Understanding Risk**
July 16	**@GLOBE Annual Mtg**
Sept 10	**@FOSS4G**
Oct 16	**@Simulation Hubs**
Nov 13	**@UN World Data Forum**

SUPPER CLUBS

- ✓ How do space agencies better partner with development banks?
- ✓ How do humanitarian organizations build strong partnerships with satellite data providers?
- ✓ How do we better open and democratize Earth science?
- ✓ How do we bridge the gap between research and humanitarian applications?

MURAL CONTEST

Our murals tell stories about the value of satellite data and tools for local humanitarian issues.

In the first year of the murals program, five US cities are unveiling murals. Next year, we go international.

St. Louis, MO	July 19th
New Orleans	August 13th
Washington, DC	August 28th
Nashville	coming soon
Detroit	coming soon

MURAL CONTEST

Our artists are painting about food deserts, urban heat resilience, aid logistics, migration, disaster preparedness, and air quality – just a few areas where satellites are addressing community needs.

HUMANITARIAN SIMULATION

October 15-17

Lifelines' global, collaborative crisis simulation brings together humanitarians, scientists, researchers, and technologists to creatively use satellite data and tools to support early warning, response and protracted recovery scenarios.

HUMANITARIAN SIMULATION

A crisis set in Democratic Republic of Congo unfolding over three days.

First, testing an early warning approach for conflict hotspots when an unexpected disaster occurs amid a global pandemic. The humanitarian crisis continues as sudden onset flooding wreaks more havoc.

HUMANITARIAN SIMULATION

Play a role in the crisis while working with a team to solve real-life humanitarian information challenges using satellite data and tools.

Answering questions around risk and community needs and impacts on communities and the environment and economics, to name just a few.

www.nasalifelines.org