

People | Places | Planet

THE GEOSPATIAL PROFESSIONAL IN ACTION FOR THE UN AND THE SDG

1 NO POVERTY



2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION

14 LIFE BELOW WATER



17 PARTNERSHIPS FOR THE GOALS



UN GEOSPATIAL NETWORK
UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT

GEOSPATIAL IN THE UN SYSTEM



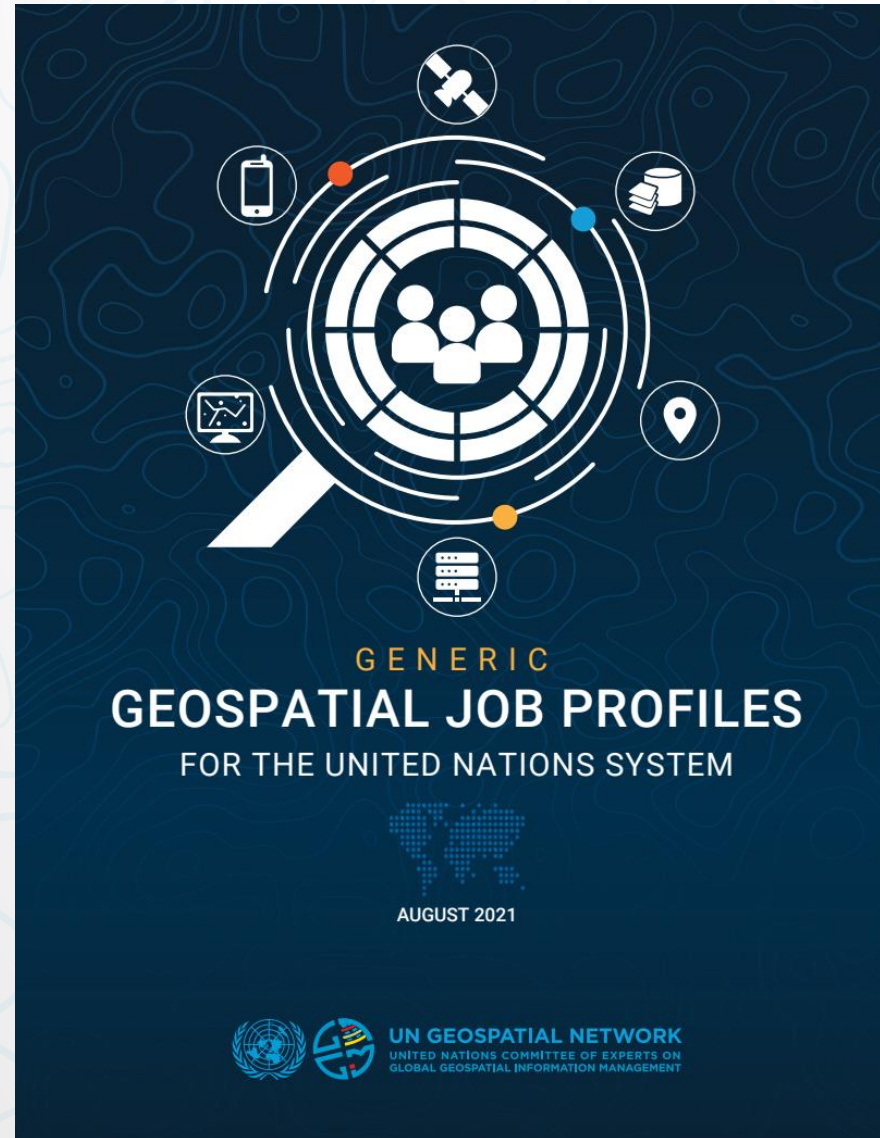
GENERIC JOB DESCRIPTION FOR GEOSPATIAL

GIS data manager

Cartographer

**Geospatial data
scientist**

**Geospatial systems
administrator**



Geographer

**Earth Observation
specialist**

Geospatial analyst

Surveyor

**GIS application
developer**

GEOSPATIAL INFORMATION MANAGER

Collects, identifies and manages geospatial data

Develops geospatial databases and data collection systems

Performs spatial analysis and integration of various data (open and big data)

Analyzes and interprets trends or patterns, using machine learning, automated techniques, and statistical methods

Develops data-driven reporting and quality control

Creates online databases, dynamic web maps and visualization dashboards

SURVEYOR

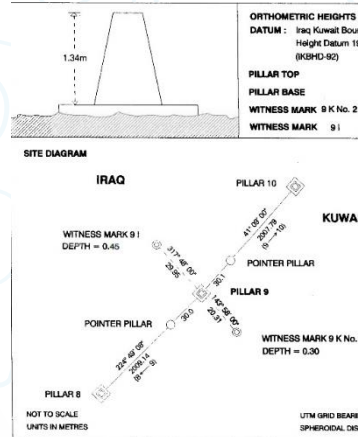
Measures exact position of various features

Plans and conducts surveys

Records survey data in digital form

Provides data and information to make or revise maps and charts

Develops cadastral and land information systems



EARTH OBSERVATION SPECIALIST

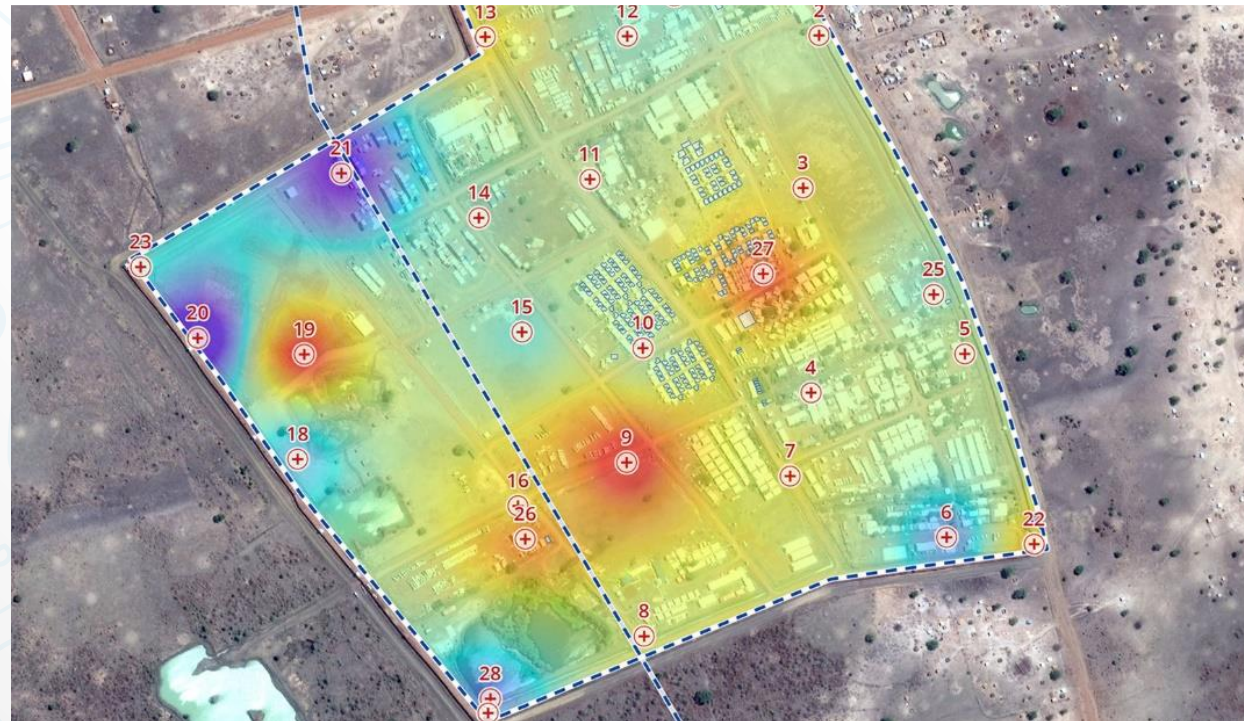
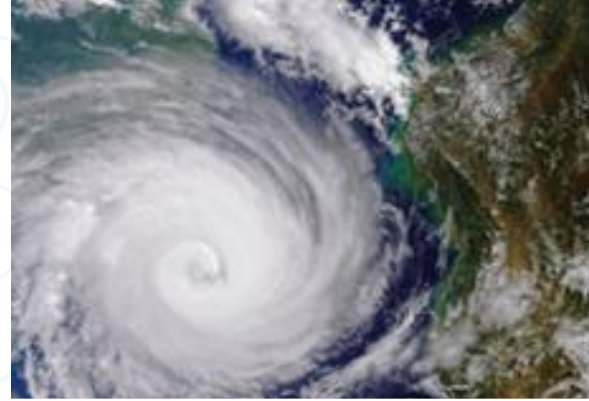
Processes data acquired from aircraft, spacecraft or ground bases

Analyses and interprets imagery or radar data

Derives analysis-ready geospatial information

Develop methods, technical reports and products from remotely sensed data

Contributes to the development of standards, policies, and procedures



CARTOGRAPHER

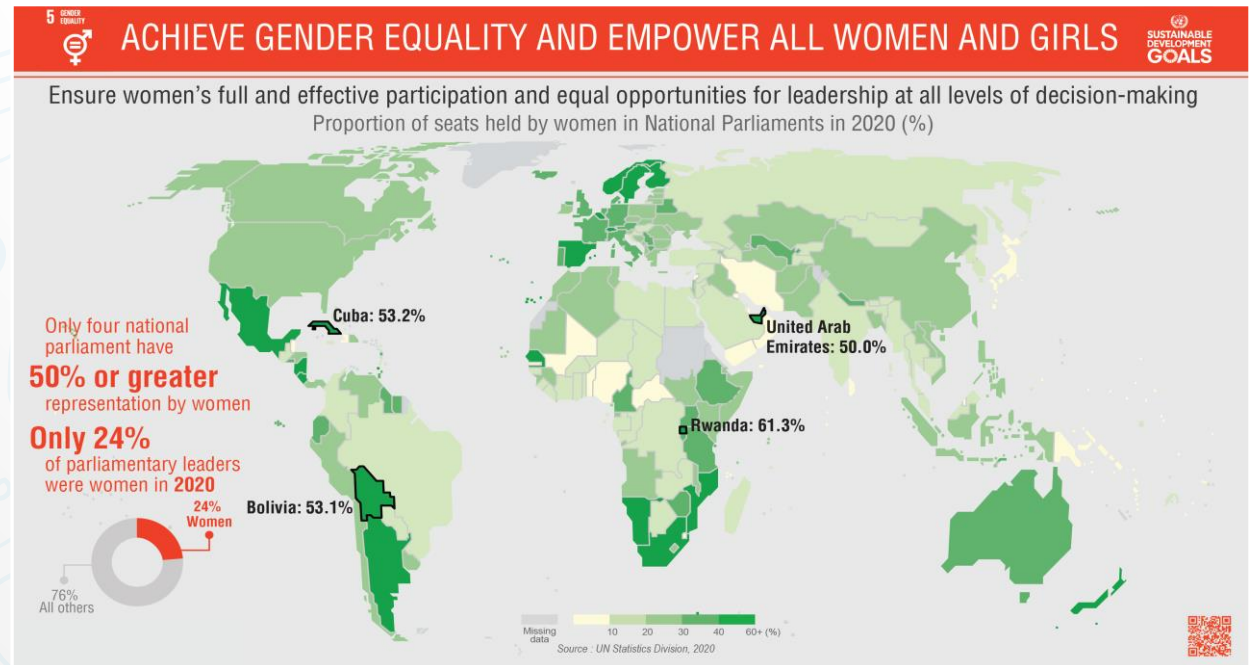
Processes geospatial data, analysis and scientific knowledge

Derives analysis-ready interpreted, scaled and symbolized geospatial data

Implements data management, analysis-ready and geospatial tools

Applies principles and practices of cartography and automated mapping, map projections & coordinate systems

Contributes to the development of standards, policies, and procedures



GEOSPATIAL SYSTEMS DEVELOPER

Maintains IT products for and software for geospatial information

Designs and implements spatial data infrastructure

Develops geospatial web-applications, data infrastructure and tools

Translates spatial requirements into information systems and applications, including coding and integrating data

Assembles specifications, operating programming and instructions





Lara Prades

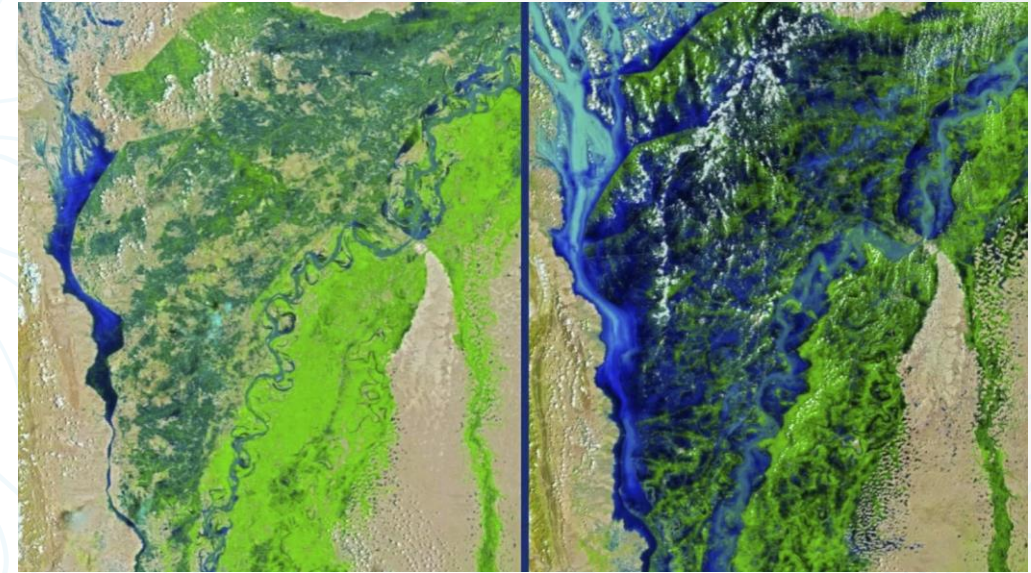
**Earth Observation
specialist**

**World Food
Programme**

Duty Station:
Islamabad, Pakistan

Country of nationality:
Spain

“Geospatial information is a door to understanding our planet, working with geospatial in the United Nations is to bring insights to help people that need it most”



NASA Earth Observatory, 2022

Professional timeline in brief:

- 2023 - today: Head of Research Assessment and Monitoring (RAM) at WFP in Pakistan
- 2021 - 2023: Project Coordinator Climate and Earth Observation Unit at WFP in Italy
- 2017 - 2021: Head of Geospatial Unit, Emergency Division, WFP in Italy
- 2009 - 2013: Geographic Information Systems Analyst at WFP in Italy
- 2007 - 2009: Environmental Analyst, Italian Institute for Sustainable Development in Italy
- 2001 - 2005: Environment specialist, Rayet Construcción S.A in Spain

Educational background

- PhD in Geomatics and Engineering, Polytechnico Torino, Italy
- Msc in Geographic Information Systems and Remote Sensing, Università degli Studi, Rome III, Italy
- Msc in Environment science, Universidad San Pablo, Spain



Shadrack Charo

Surveyor

**United Nations
UNIFIL**

Duty Station:
Naqoura, Lebanon

Country of nationality:
Kenya

“I love the outdoors: Surveying takes me all over the countryside with great scenery and fresh air, which keeps me healthy and active. Working with UNIFIL is a wonderful opportunity to participate to peace.”

Professional timeline in brief:

2013 - today: Surveyor at the UN Interim Force In Lebanon

2004 - 2013: GIS Specialist at UN Peacekeeping operation in D.R. of the Congo

2001 - 2004: Geospatial Information Systems consultant for UNDP in Kenya

1999 - 2001: Surveyor for Geomaps Africa in Kenya

Educational background

Department of Geospatial and Space Technology, University of Nairobi, Kenya

URL: <https://geospatial.uonbi.ac.ke/>



UNIFIL, 2023



Luisa Sterponi

Earth Observation specialist

**United Nations
UNODC**

Duty Station:
Lima, Perú

Country of nationality:
Italian

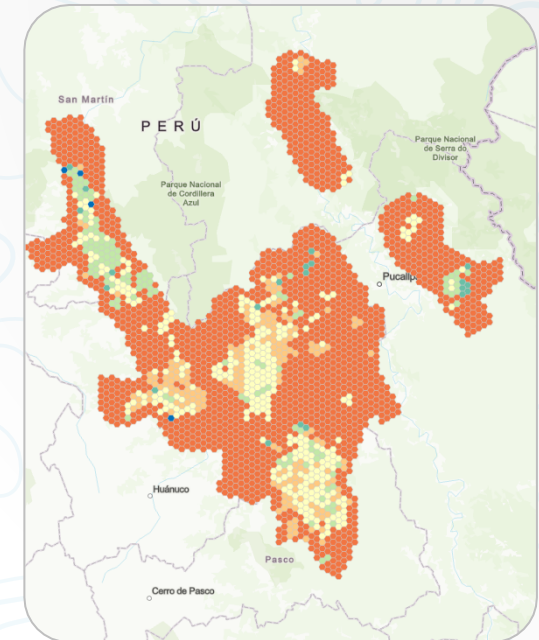
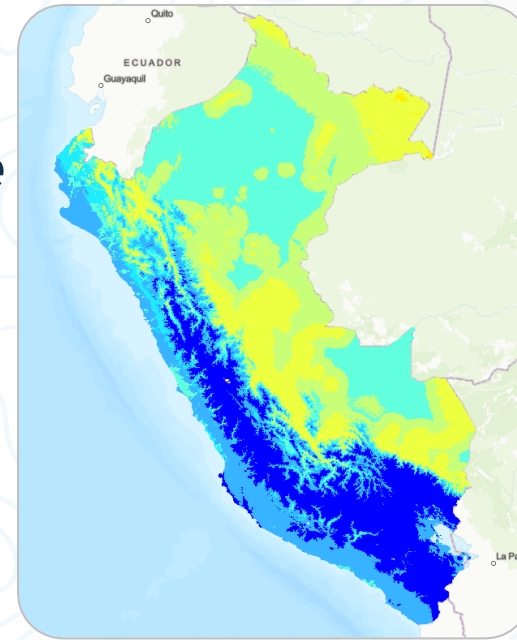
“Geospatial analysis power is about helping leaders around the world make decisions based on science for the people. Witnessing my work at the United Nations have tangible impact strengthens my passion for the application of geospatial technology”

Professional timeline in brief:

- 2021 - today: Project lead Illicit Crop Monitoring System, UN Office against Drugs and Crime in Perú
- 2020 - 2021: Remote Sensing specialist in UN Office against Drugs and Crime in Perú
- 2018 - 2019: Professor and adviser at the Peruvian Space Agency in Perú
- 2017 - 2018: Adviser on geospatial information at the Peruvian Ministry of Defense in Perú
- 2016 - 2017: GIS specialist REDD+ Project at the Peruvian Ministry of the Environment in Perú
- 2002 - 2014: General Manager of Spacedat S.r.l. - Remote Sensing and GIS applications in Italy

Educational background

Msc in Earth Observation, Msc in Biology-Ecology, Universidad La Sapienza, Italy



SIMCI Perú - UNODC, 2021



Jaouad Tilout

Geospatial analyst

**World Health
Organization**

Duty Station:
Manila, Philippines

Country of nationality:
Morocco

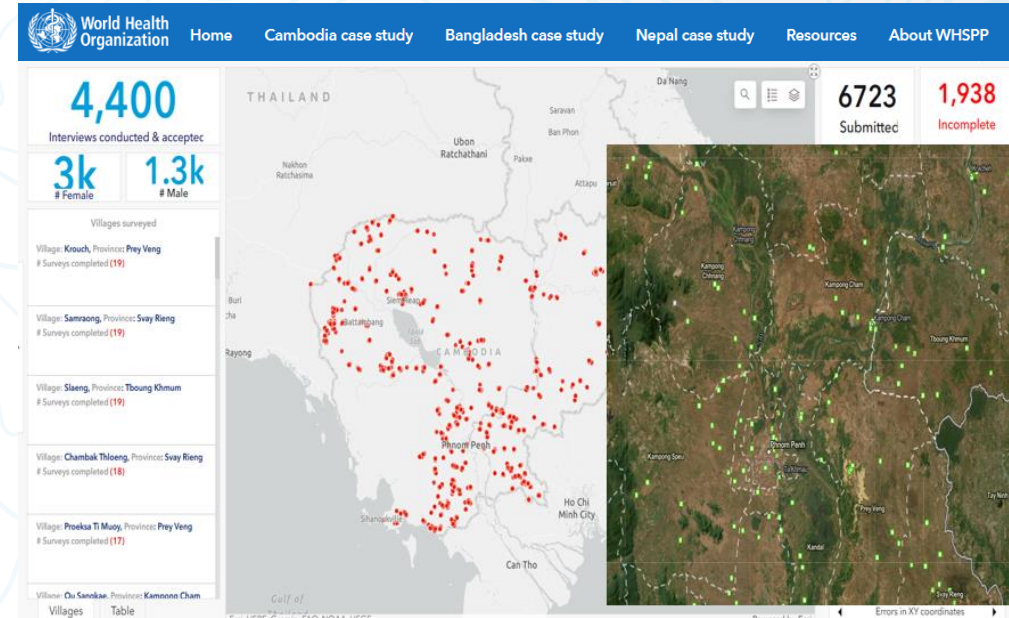
“Working in the United Nations is the magic key to learn more about different geospatial information systems and its fields of application, currently in public health”

Professional timeline in brief:

- 2022 - today: GIS Consultant at WHO in Philippines
- 2019 - 2023: GIS Consultant for USAID Haiti
- 2015 - 2017: Health Information Manager at the WHO in Jordan
- 2009 - 2013: Information Management Officer at UN OCHA in D.R. of the Congo and South Sudan
- 2005 - 2009: GIS expert with the UN Peacekeeping missions in Sudan and Darfur
- 2001 - 2005: GIS & Earth observation Engineer in Morocco with Geomatic

Educational background

Hassania School of Public Works in Geographic Information Sciences, Morocco
<https://www.ehtp.ac.ma/>



WHO Dashboard, 2022



Mina Lee

Cartographer

United Nations

Duty Station:
New York, USA

Country of nationality:
Republic of Korea

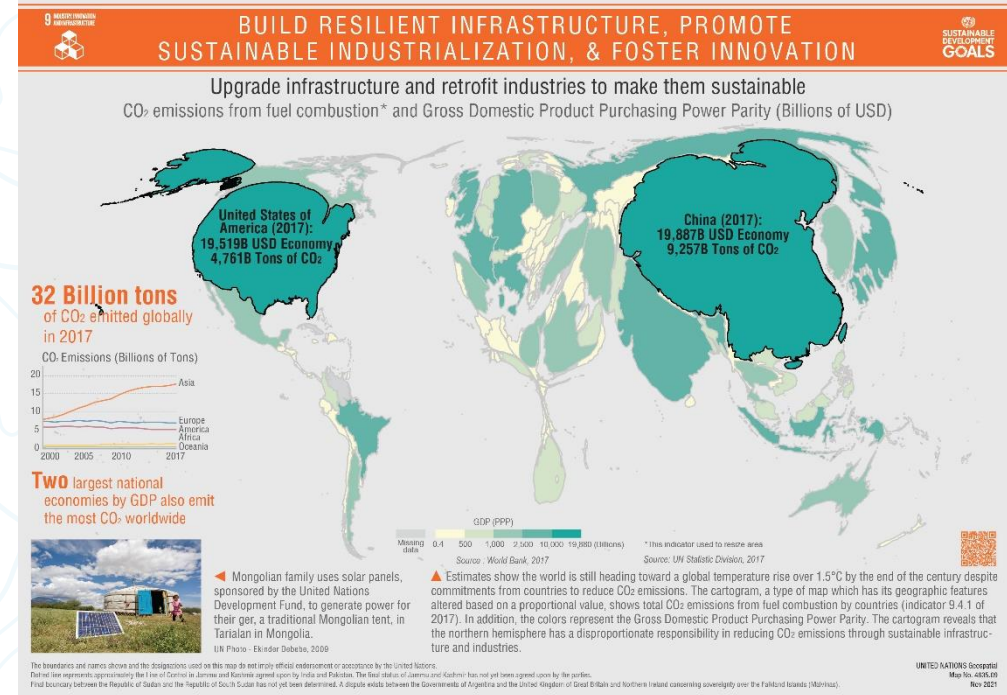
“Cartography combines science and art for realization of people and planet, it can play a powerful and effective role in information-based decision making for sustainable world in the United Nations”

Professional timeline in brief:

- 2018 - today: Associate Geospatial Information Officer at UN Secretariat in USA
- 2017 - 2018: GIS Manager at World Wild Fund for nature in Myanmar
- 2013 - 2016: Project Manager at World Wild Fund for nature in D.R. of the Congo
- 2012 - 2013: Information Management Officer at UNHCR in Thailand
- 2009 - 2012: GIS Specialist at UN Peacekeeping operation in D.R. of the Congo
- 2008 - 2008: Intern at Cartographic Section, UN Secretariat in USA
- 2006 - 2008: Research Assistant in GIS and Remote Sensing at Korea University, Republic of Korea

Educational background

Msc in Science in Environmental science, GIS, and RS, Korea University, Republic of Korea



UN Geospatial, 2021



Zeeshan KHAN

GIS Administrator

United Nations

Duty Station:
Brindisi, Italy

Country of nationality:
Pakistan

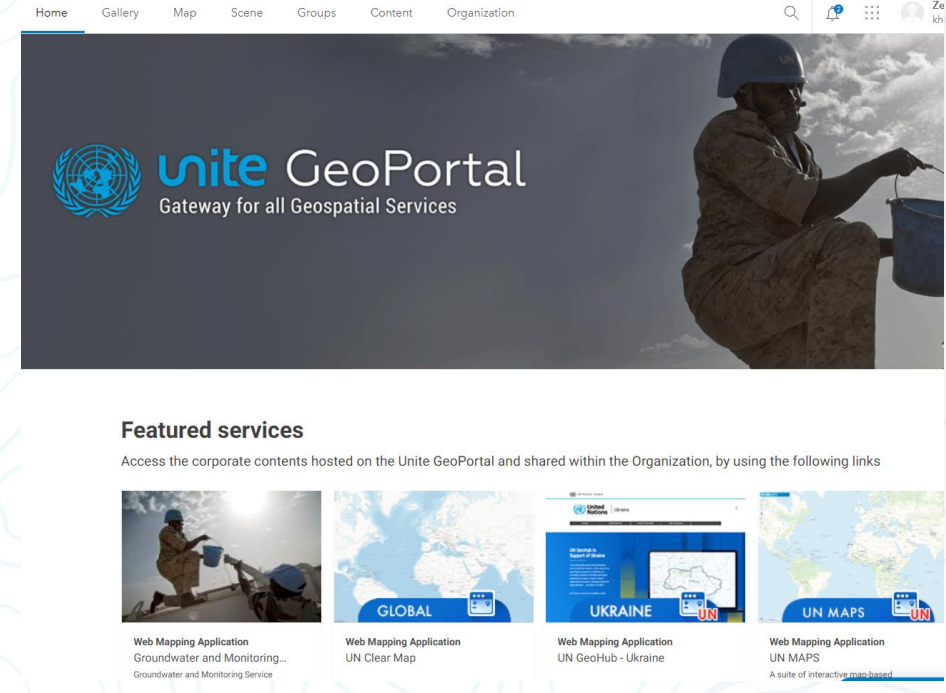
“Computing requirements for GIS professionals are always a big challenge, Happy to enable my colleagues with the most modern on-prem GIS cloud, where they can work, and share the Geospatial information easily across different country offices.”

Professional timeline in brief:

- 2022 - today: Information Systems Officer at UN Global Service Centre in Italy
- 2020 - 2022: Geospatial Information Officer at UN Global Service Centre in Italy
- 2017 - 2020: Associate Geospatial Information Officer at UN Global Service Centre in Italy
- 2016 - 2017: Geospatial Developer at UNMISS in South Sudan
- 2009 - 2016: Country MIS Manager at ACTED / REACH in Pakistan
- 2006 - 2009: IT / Databases Officer at Norwegian Refugee Council in Pakistan

Educational background

MS in GIS and Remote Sensing, BS in Information Technologies
Certified in BRM, PMP, Prince 2, ITIL



[UN Geoportal](#), 2023



SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS


SUSTAINABLE DEVELOPMENT GOALS



Children in Shade Bara village, Afghanistan
UNDP Photo, Omer Sadaat, 2018



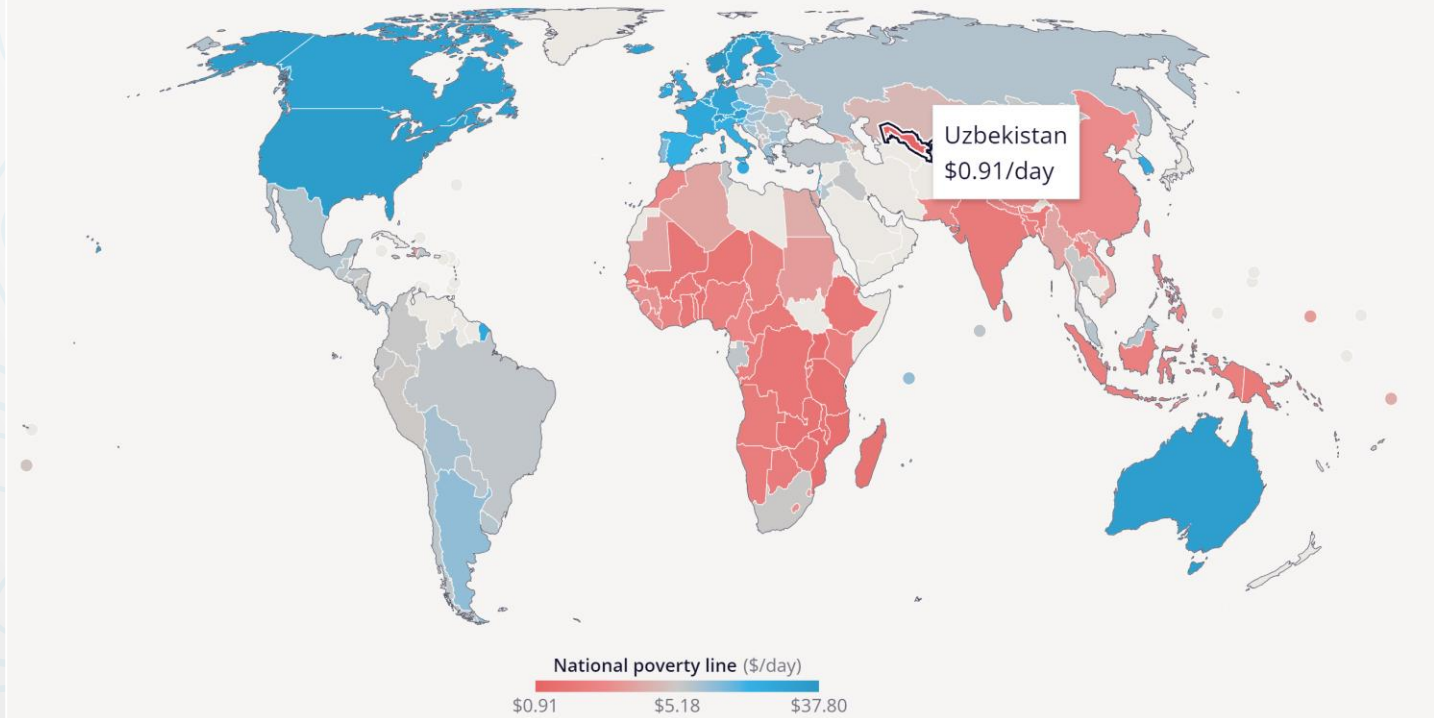
UN Secretary-General meets internally displaced people in Central Arica Republic
UN Photo, Eskinder Debebe, 2017



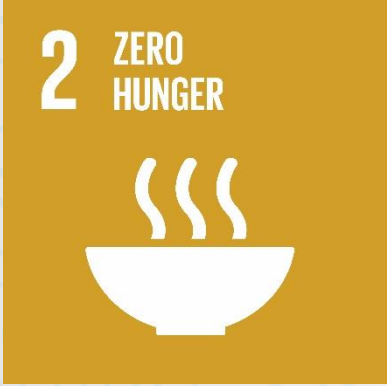
ATLAS of Sustainable Development Goals 2023

Where does the international poverty line come from?

Harmonized national poverty lines from circa 2017 (\$/day)



Poverty line in US Dollars per day
World Bank, 2023



People who can't afford a healthy diet worldwide
World Bank, 2023



A child eats at camp in Darfur, Sudan
UN Photo/A. Gonzalez Farran, 2014



UN supported irrigation for rice fields in Mali
UN Photo/Marco Dormino, 2023



Interactive Hunger Map: global hunger monitoring system
World Food Programme, 2023

3 GOOD HEALTH AND WELL-BEING



Microplanning training using GIS in Bangladesh WHO, 2023



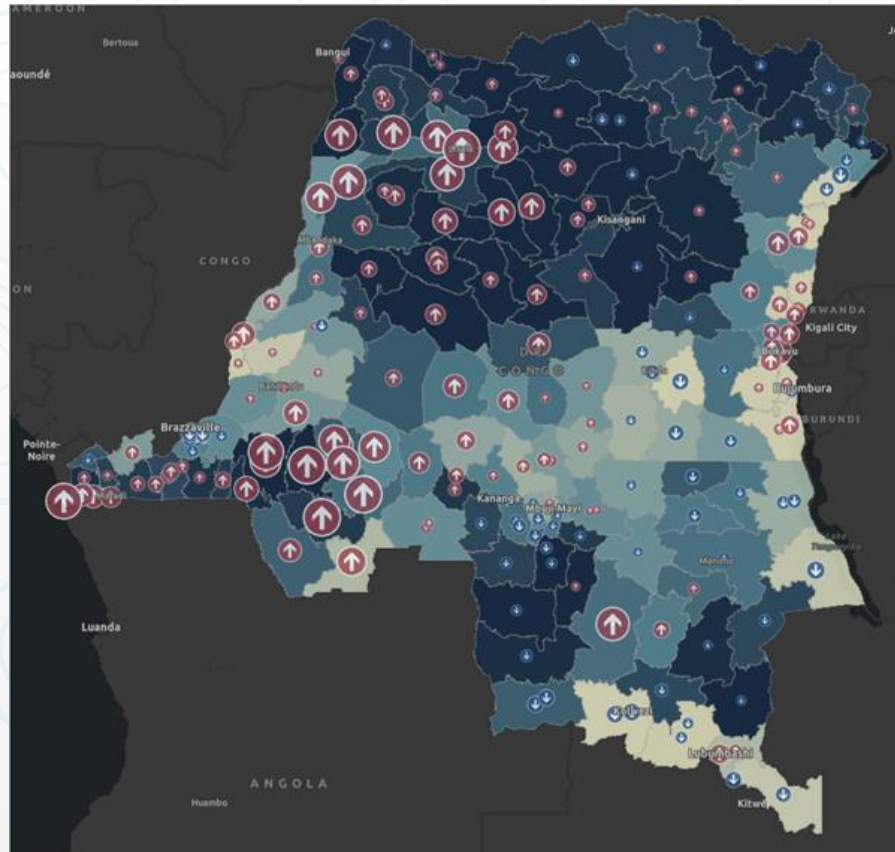
Targeted COVID19 vaccination campaign in Indonesia UNICEF 2023



Ebola response in Uganda supported WHO 2022



Geospatial Information Systems training in Kenya WHO 2023

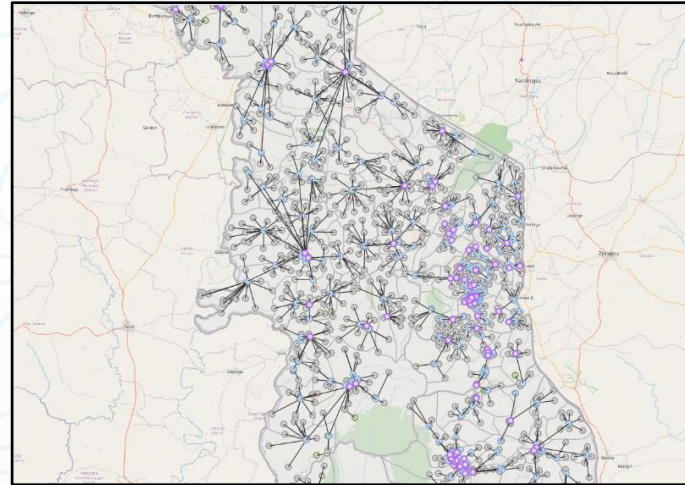


Tutorial screenshot on processing data for mapping of Malaria in D.R. of the Congo ESRI, 2023

4 QUALITY EDUCATION



School cluster network analysis in Togo
UNESCO-IIEP, 2023

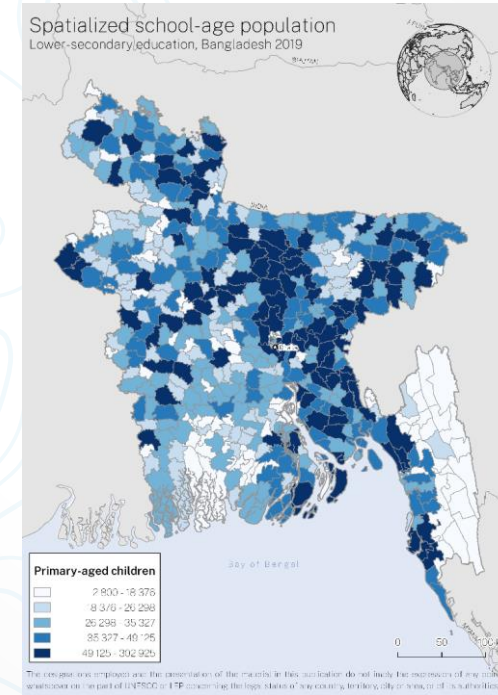


Children use their tablet at e-Learning Centre in Sudan
UNICEF/Noorani, 2020



Aerial view of a school with blue colored corrugated iron roof with children playing in Nepal
Shutterstock/T. Schneider, 2021

Equipment to survey school location in Togo
UNESCO-IIEP, 2023



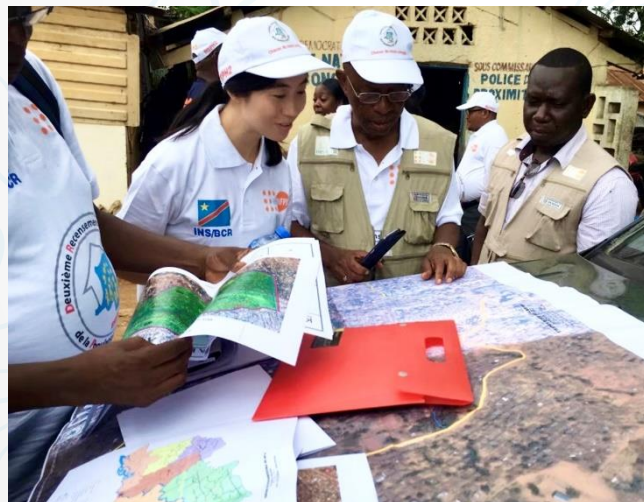
School-age population:
Lower Secondary for
Bangladesh in 2019
UNESCO-IIEP, 2020

5 GENDER EQUALITY

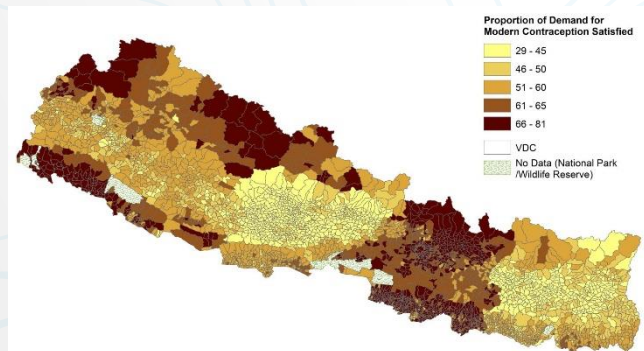


The 64th Session of the Commission on the Status of Women
UN Photo/Loey Felipe 2020

Supporting census cartography in the D.R. of the Congo
UNFPA 2017



Women and girls caught in humanitarian crisis in the D.R. of the Congo
UNFPA 2021

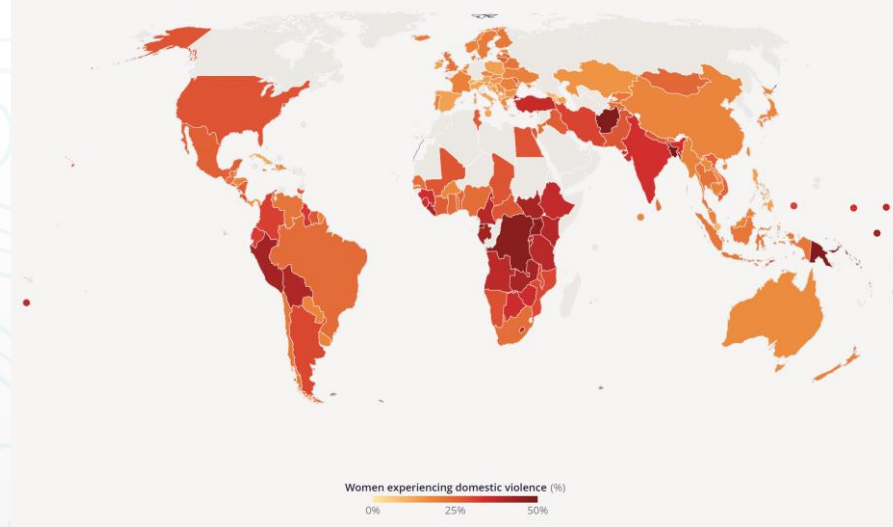


Map of Demand for modern contraception satisfied in Nepal
UNFPA, 2023

THE WORLD BANK | ATLAS of Sustainable Development Goals 2023

Globally, a third of all women have experienced intimate partner violence at least once in their lifetime

Proportion of women who have ever experienced intimate partner violence (% of women ages 15-49)

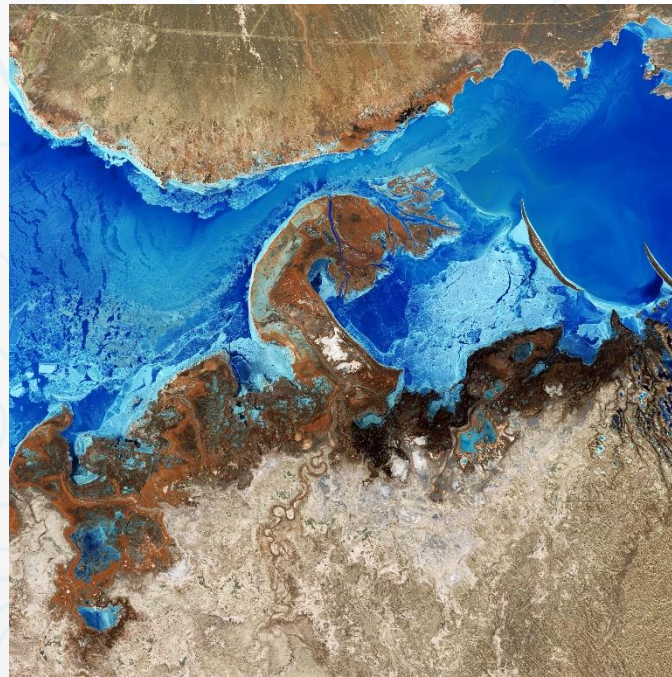


Map of Women who experienced intimate partner violence
World Bank, 2023

6 CLEAN WATER AND SANITATION

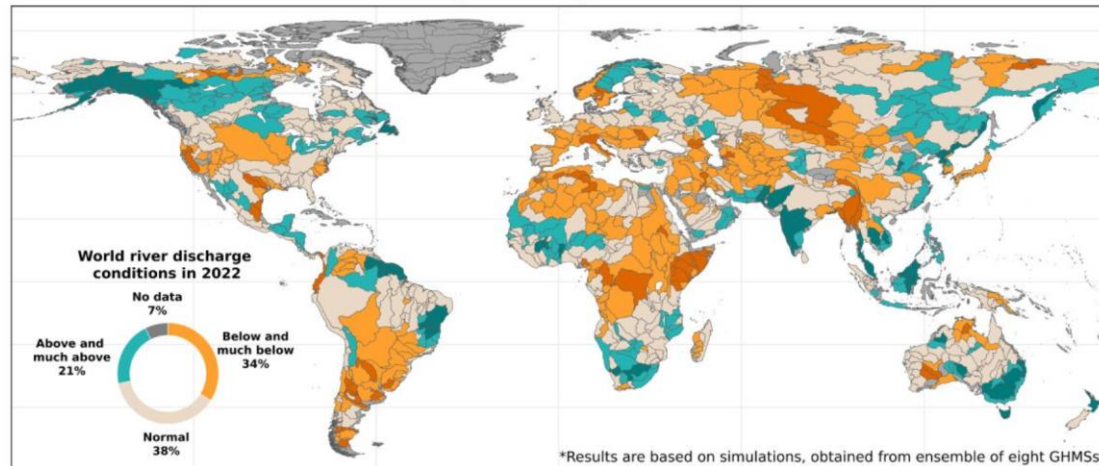


Children washing hands at school reopening after COVID19 pandemic
UNICEF/Potter, 2021



Sentinel satellite imagery for monitoring water bodies changes
ESA/Copernicus Sentinel, 2021

Figure showing average river discharge for the year 2022 compared to the historic average from period 1991–2020



much below below normal above much above



7 AFFORDABLE AND CLEAN ENERGY



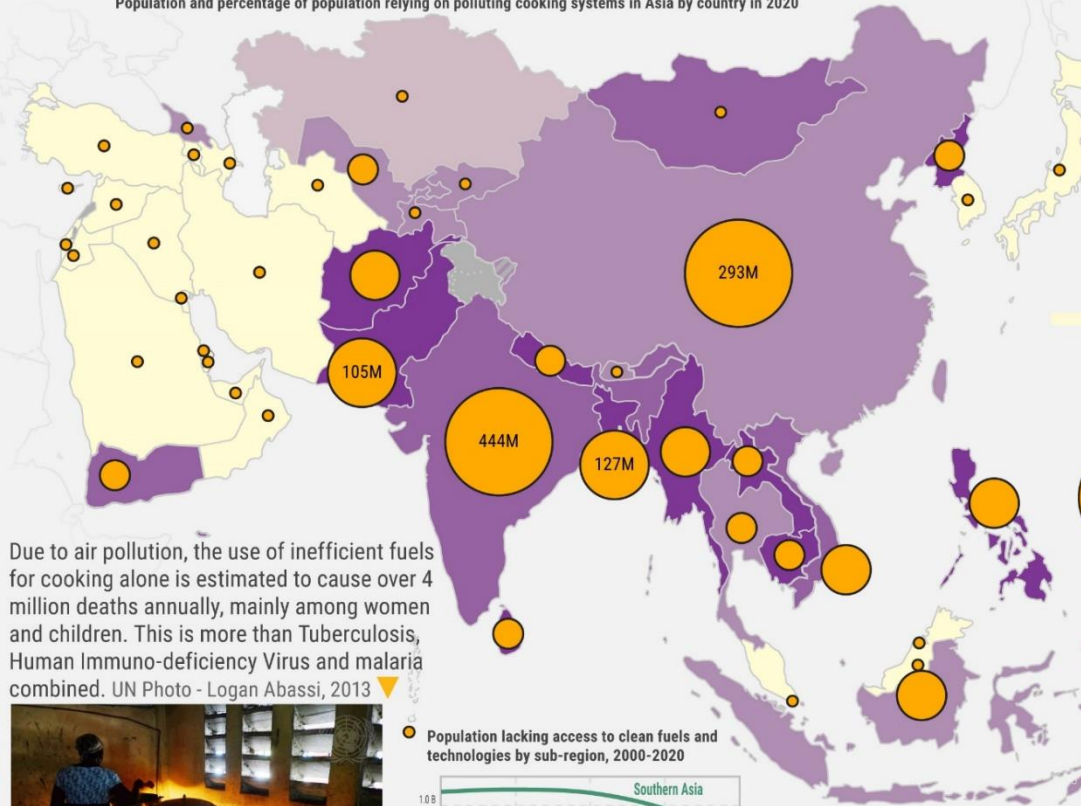
ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL



By 2030, ensure universal access to affordable, reliable and modern energy services

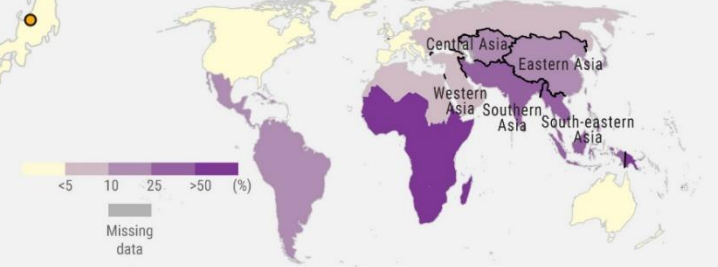
Population relying on polluting fuels and technologies for cooking

Population and percentage of population relying on polluting cooking systems in Asia by country in 2020



Traditional uses of polluting fuels for cooking – such as charcoal, coal, crop waste, dung, kerosene and wood – have dramatic consequences for the **environment, economic development and health**

Percentage of population relying on polluting cooking systems, by sub-region in 2020



2.4 billion people, mostly in low and middle-income countries, still lacked access to clean cooking fuels and technologies in 2020

Only about **one in five** people in **Sub-Saharan Africa** has access to clean cooking. In total, **more than half** of those having to rely on polluting cooking systems **live in Asia**

Global distribution of people lacking access to clean fuels

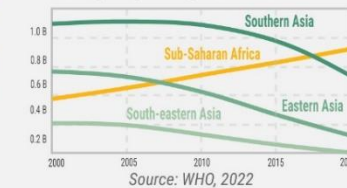


Source: WHO, 2022
 *Western and Central Asia *
 UNITED NATIONS Geospatial Map No. 4652.7 Nov 2022

Due to air pollution, the use of inefficient fuels for cooking alone is estimated to cause over 4 million deaths annually, mainly among women and children. This is more than Tuberculosis, Human Immuno-deficiency Virus and malaria combined. UN Photo - Logan Abassi, 2013



Population lacking access to clean fuels and technologies by sub-region, 2000-2020



Population lacking access to clean fuels **decreased consistently in Asian** regions in the last years **Sub-Saharan Africa** remains the only region in which this number **is rising**

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.



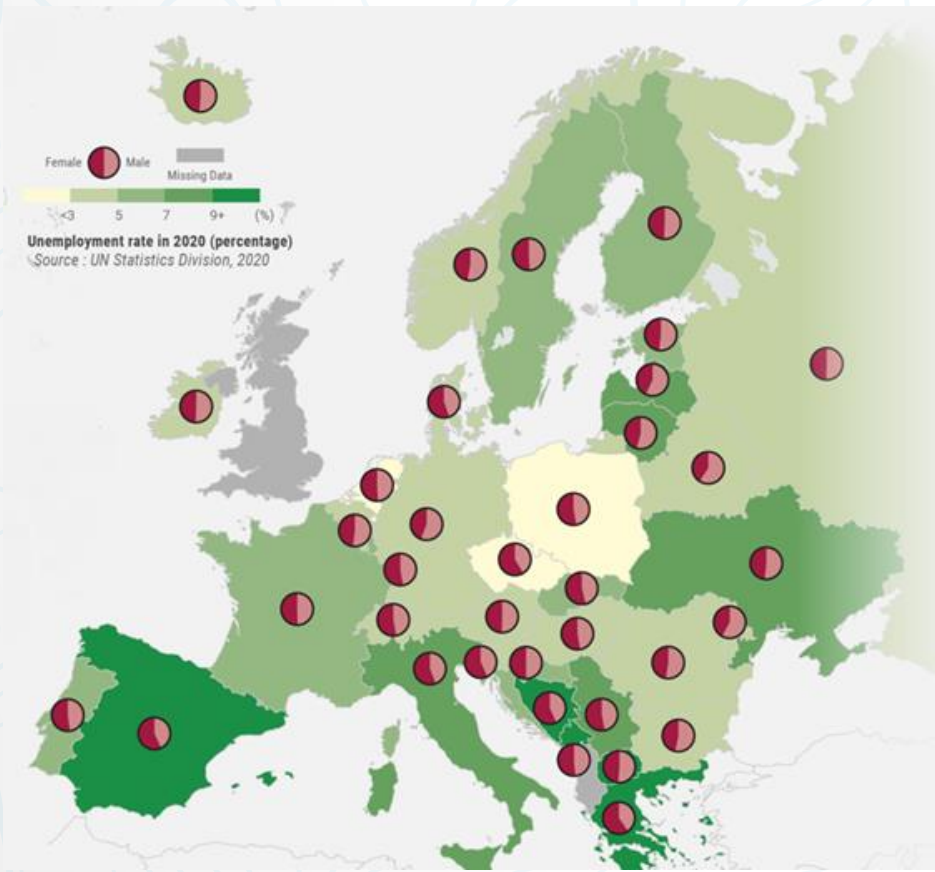
Wind farm off the coast of Denmark
 UN Photo/Eskinder Debebe, 2009



Men install solar panels for a hospital in Yemen
 UNDP, 2021

Map on polluting fuels and technologies in Asia
 UN Geospatial, 2009

8 DECENT WORK AND ECONOMIC GROWTH



Map excerpt on unemployment rate in Europe, by sex/age UN Geospatial, 2022

Damage assessment using aerial view of the surroundings of the Al-Nouri Mosque of Mosul after the destructions in 2018 in Iraq UNESCO, 2018



Agriculture of non-wood forest as income source in Kosovo UNDP Eurasia/Arben Llapashtica, 2016



Drones are increasingly used to map flood damage to crops and properties and support local farmers and businesses UNICEF/Brown, 2018



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Screen capture from the One UN Geospatial Situation Room showing ITU data on submarine cables ITU, 2023



A woman uses a laptop computer ITU, 2021

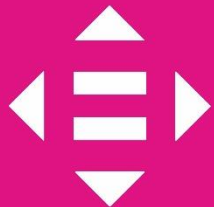


Ladies working in a textile industry in Bangladesh ILO Photo/Marcel Crozet, 2021

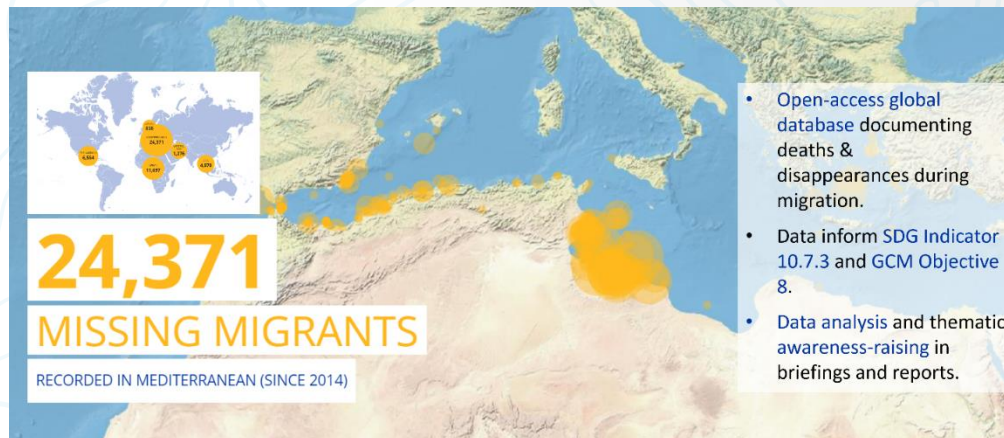


Surveying equipment and ground station Geoscience Australia, UNGGRF2021

10 REDUCED INEQUALITIES



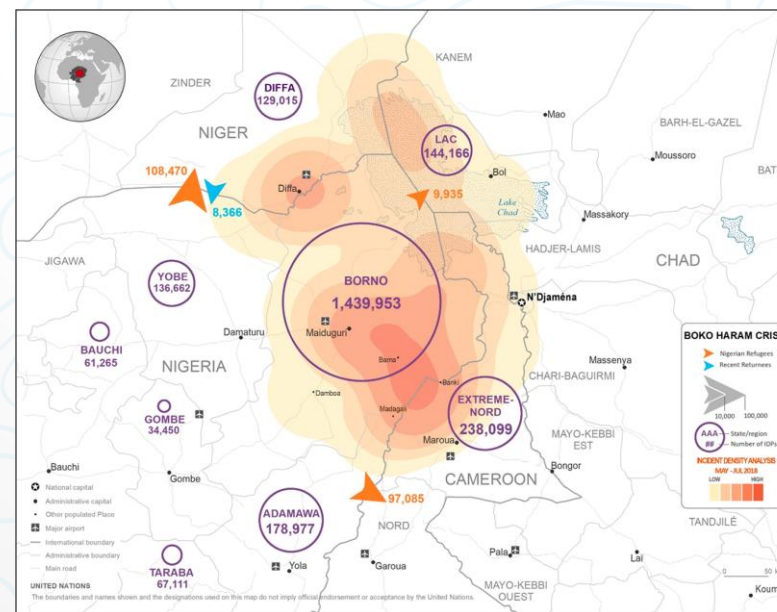
Missing migrants aims to document disappearances of people during their migratory journeys to international destinations worldwide
International Organization for Migration, 2023



Migrants on the road
IOM, 2023



Drone view showing stark contrast of slum lines the Mithi River near the National Stock Exchange in Mumbai
National Geographic/Johnny Miller, 2019

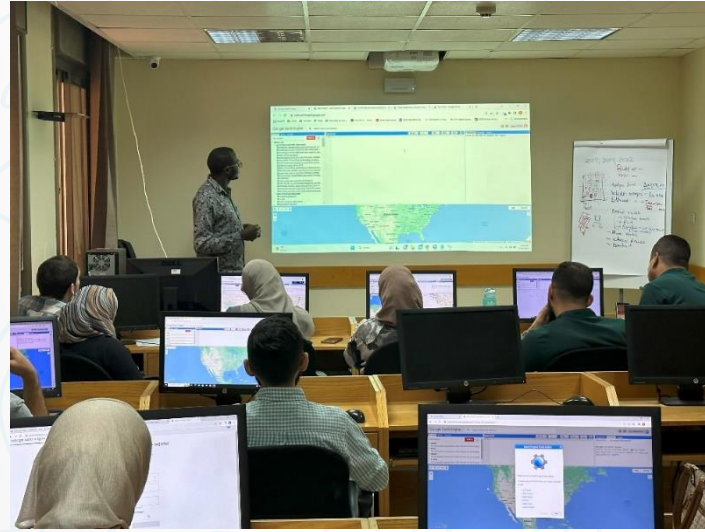


A regional map of showing incident density associated with Boko Haram and refugees/returnees, in Eastern Nigeria
UN Geospatial, 2018

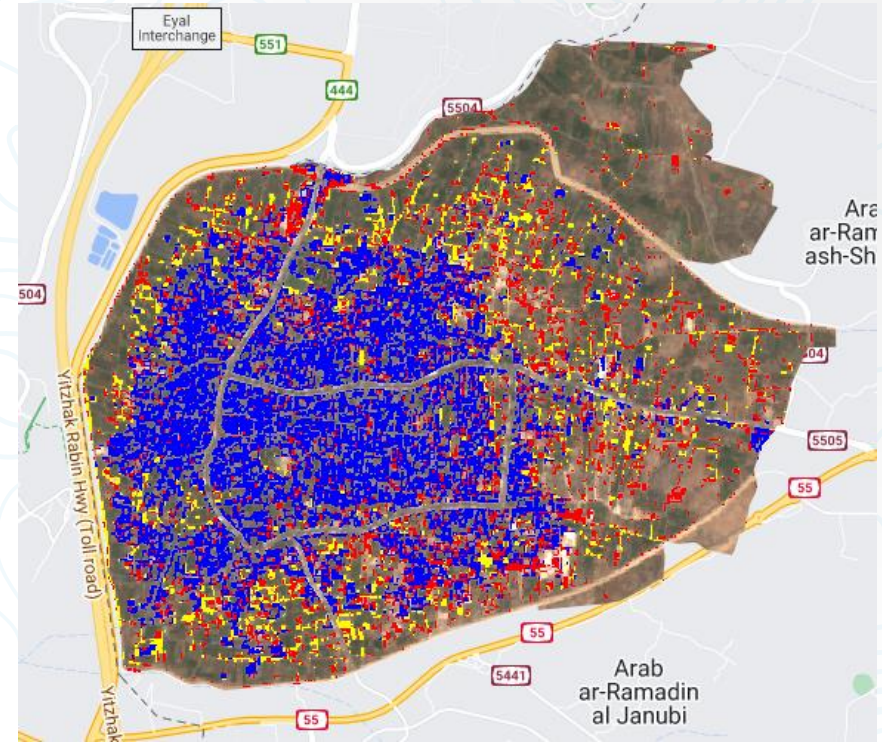
11 SUSTAINABLE CITIES AND COMMUNITIES



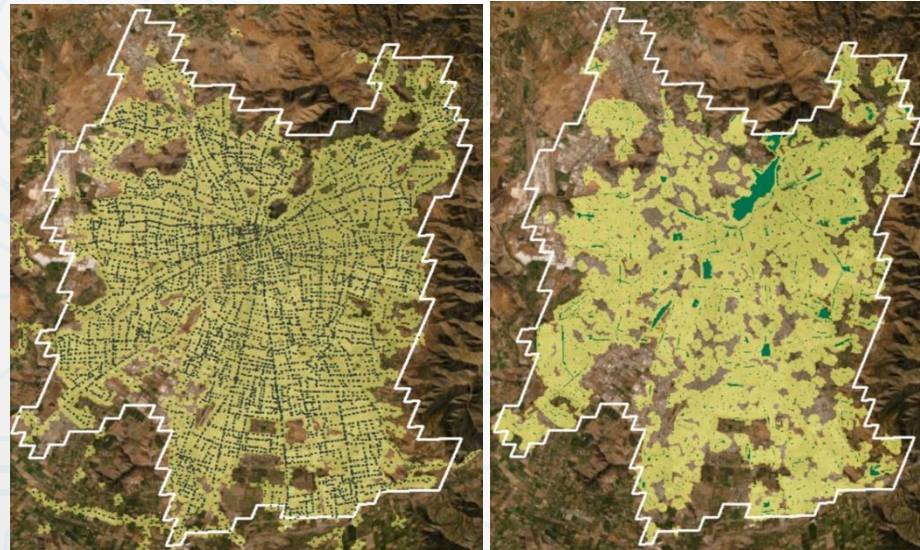
Slum Upgrading Programme in Accra, Ghana
UN Habitat, 2020



Technical training on geospatial data generation for SDG 11 monitoring in Palestine
UN Habitat, 2023



Built up areas extracted from Google Earth Engine by technical team in Palestine
UN Habitat, 2023



Mapped public transport stops and serviced areas analysis (a) within 500 and (b) within 400 meters walking distance in Santiago
UN Habitat, 2023

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



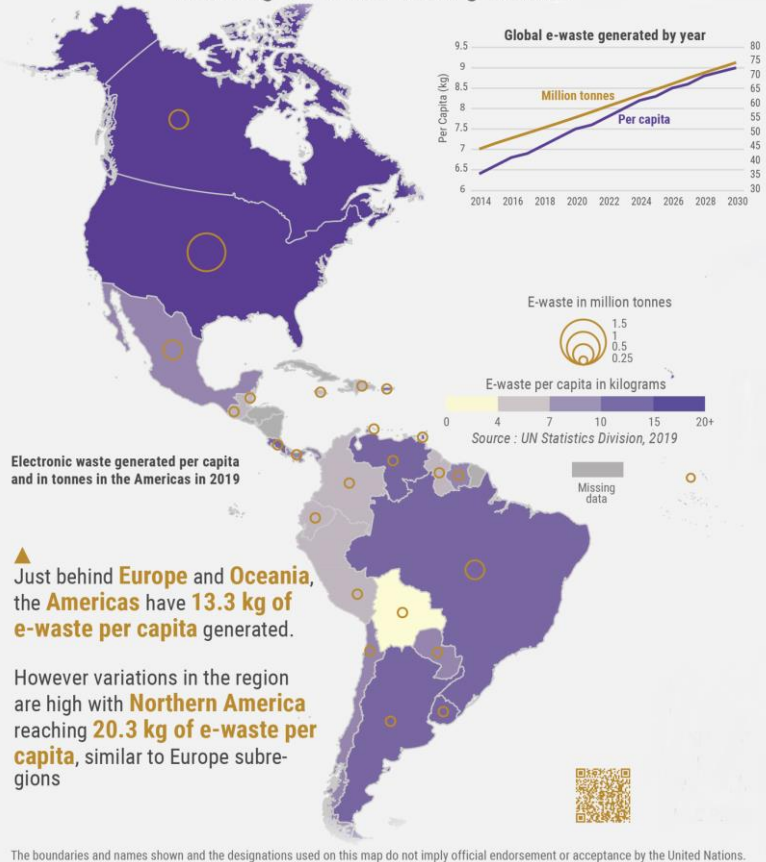
Children play outside a metal polishing work-shop in the Shivnagar Mohalla slum in Moradabad in India.
UNICEF/Niklas Halle'n



Globe of the Value of natural capital change 1995-2018
World Bank, 2023



Reducing electronic waste generated



Women and children search a garbage dump in Timor-Leste
UN Photo/Martine Perret, 2009

Globe of the Value of natural capital change 1995-2018
UN Geospatial, 2022

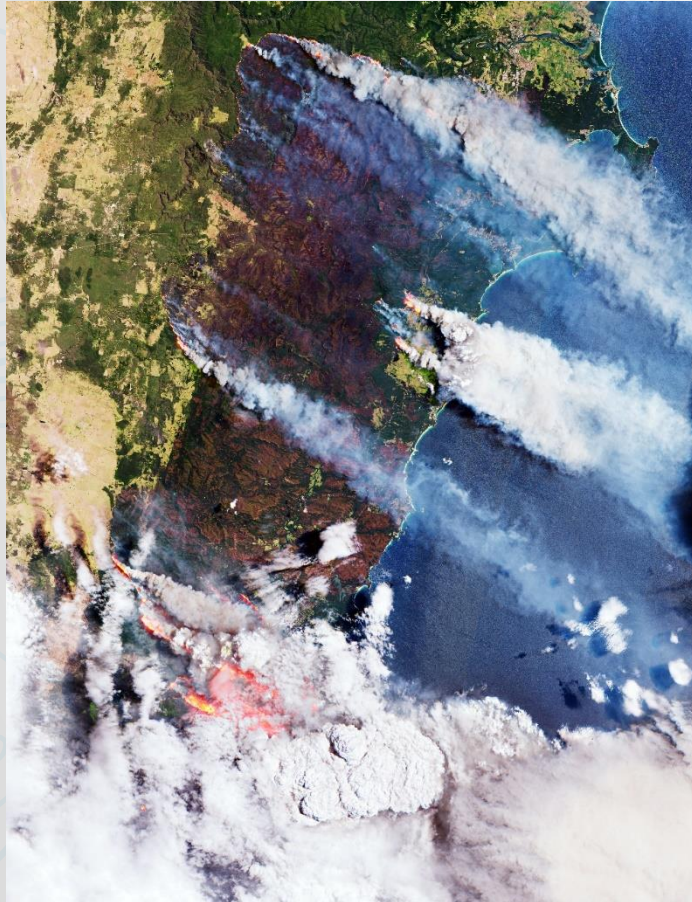
13 CLIMATE ACTION



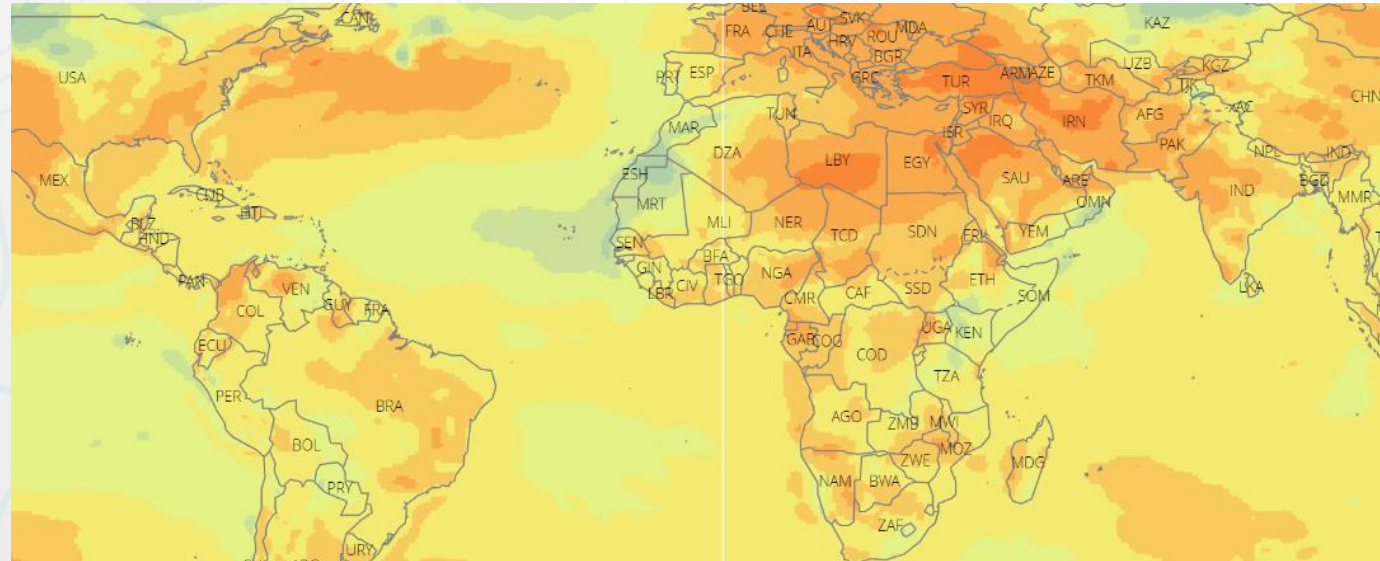
Fire raging in Australia
Queensland Fire & Emergency Services, 2019



The polar bear's natural habitat is disappearing as ice caps melt due to climate change
WMO/Karolin Eichler, 2022

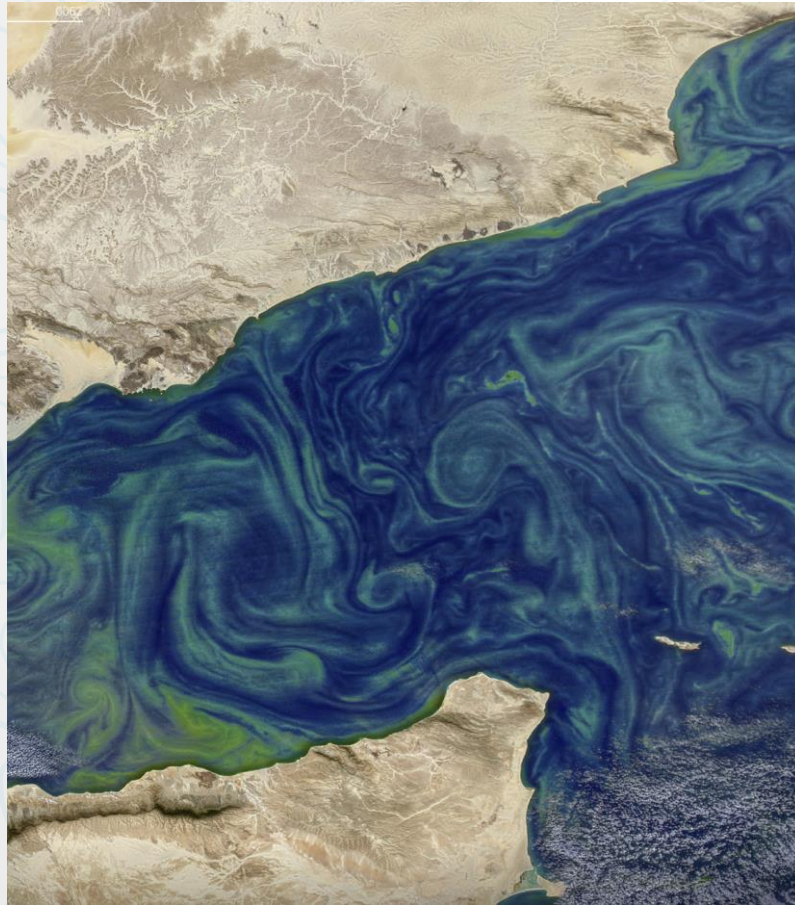
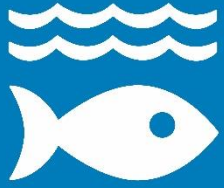


Fires in Australia, brownish areas depict burned vegetation and provide an idea of the size of the area affected by the fires
ESA/Copernicus Sentinel, 2019

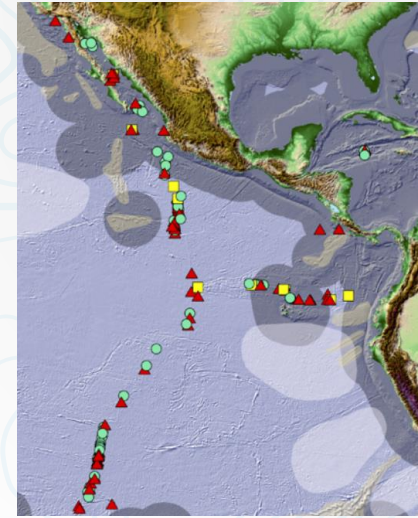


Worldwide temperature anomaly
UN Disaster Risk Reduction, 2021

14 LIFE BELOW WATER

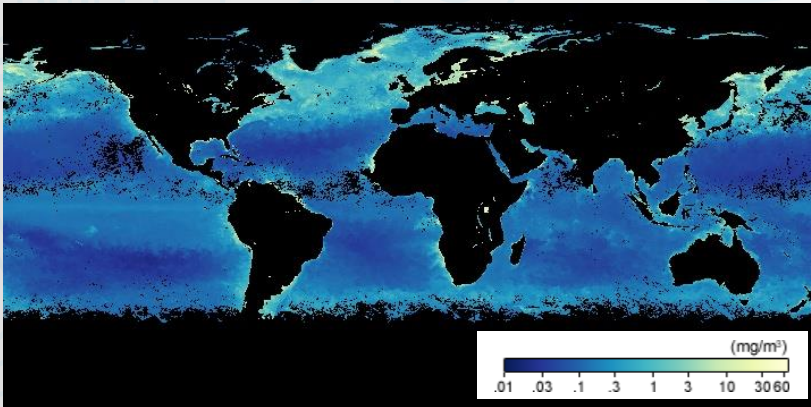


Phytoplankton bloom in Gulf of Aden
NASA/MODIS, 2018



Main marine minerals deposits and geological features
International Seabed Authority, 2023

Global sea surface chlorophyll concentration
NASA/MODIS, 2019



14 LIFE BELOW WATER CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

By 2025, prevent and significantly reduce marine pollution of all kinds

8 Million tonnes of plastic end up in oceans every year

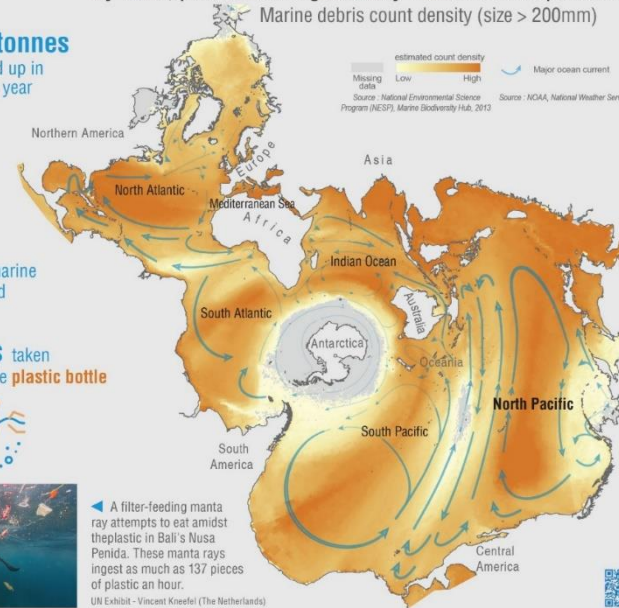
80% of all marine debris studied is plastic

450 years taken to disintegrate plastic bottle



A filter-feeding manta ray attempts to eat amidst the plastic in Bali's Nusa Penida. These manta rays ingest as much as 137 pieces of plastic an hour.
UN Exhibit - Vincent Kneffel (The Netherlands)

Marine debris count density (size > 200mm)



A total of 202,800 tonnes of plastic pieces afloat at global ocean over 200mm surface

>200mm surface plastic mass by ocean basin in 2013 (Tonnes)

Ocean Basin	Mass (Tonnes)
North Pacific	73,400
North Atlantic	46,700
Indian Ocean	45,200
South Pacific	16,900
Mediterranean Sea	10,600
South Atlantic	10,000

Source: Eriksson M, Lebraton LCM, Carson HS, Thai M, Moore CJ, Davranz JC, et al. (2014) Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. PLoS ONE 9(12): e111913. <https://doi.org/10.1371/journal.pone.0111913>

The sustainability of our oceans is under severe threat as every year an estimated 5 to 12 million metric tons of plastic enter the ocean, costing roughly \$13 billion per year – including clean-up costs and financial losses in fisheries and other industries. About 89% of plastic litter found on the ocean floor are single-use items like plastic bags. The estimated count density of marine debris bigger than 200mm shown on the map (2013) is based on an oceanographic model of floating debris by The National Environmental Science Program (NESP), Australia. Highest values can be observed close to the coastline as the main sources of marine plastics are land-based. The geospatial data on marine debris is shown using the Spilhaus projection which allows to show the ocean as a continuous body of water, and the main ocean currents represented as arrows are intended to emphasize the dynamic nature and movements that contribute to the concentration of the marine plastics in certain location.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map of Marine debris in the oceans
UN Geospatial, 2021

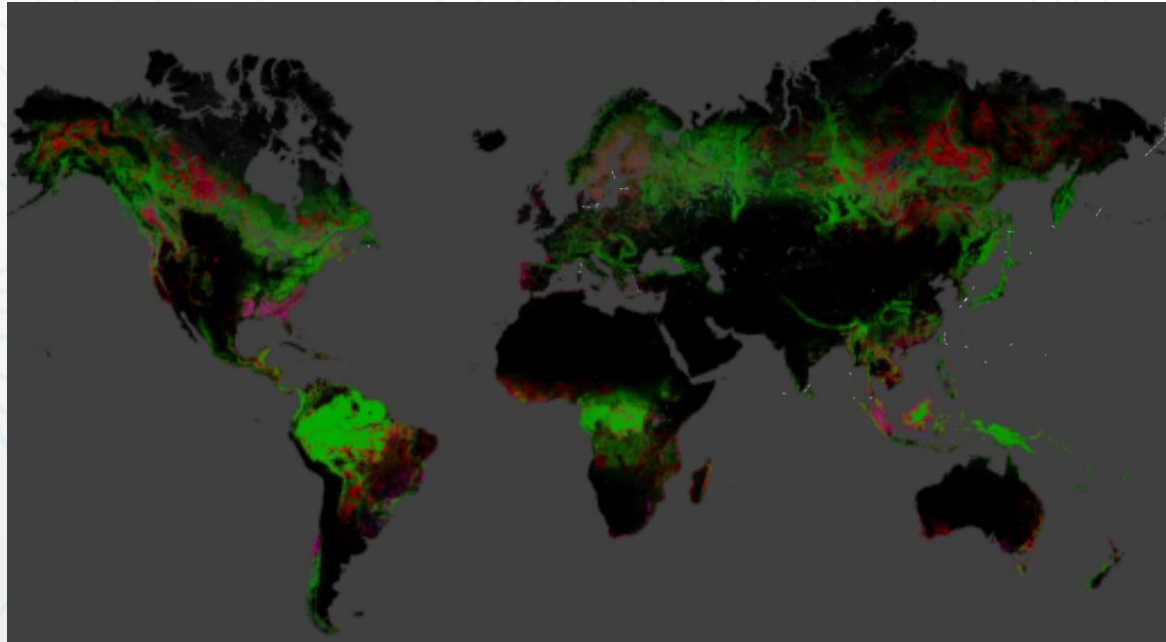
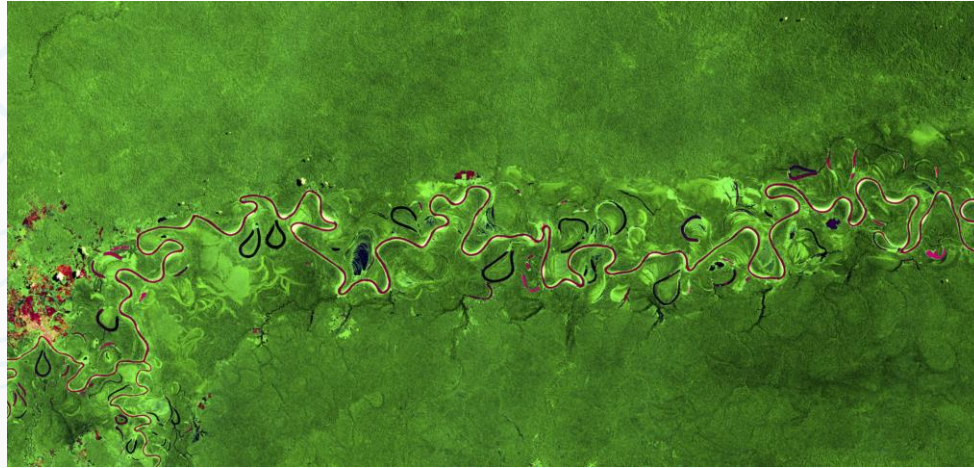
UNITED NATIONS Geospatial
Map No. 4635: 14
Nov 2021

15 LIFE ON LAND



Voluntary worker protecting the forest in Kenya
UN Photo, Riccardo Gangale, 2012

The Amazon rainforest is crucial for helping to regulate global warming as the forests absorb millions of tons of carbon emissions every year.
ESA/Copernicus Sentinel, 2019



Imagery data results to monitor forest cover (green) and forest loss (red) between 2000-20
Hansen, UMD, Google, USGS, NASA, 2020

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



Missile and drone strikes against critical infrastructure on a broad scale in Ukraine
OHCHR 2022, Ukraine



Sergeant Dora Doroye of the UN Mission in Liberia, briefs members of the Ghanaian battalion with maps in Liberia
UN Photo/Christopher Herwig, 2009



The Security Council meets with a map of Abyei projected on the screen
UN Photo/Berkowitz, 2011



Taking field measures and surveys in an illicit coca field in Peru
UN Office for Drug and Crime, 2022

17 PARTNERSHIPS FOR THE GOALS



Members of UN Police and the South Sudan Services, working in partnership to secure the country, taking part in a rope pulling competition, hold hands in camaraderie, during celebrations to mark the International Day of Peace
UN Photo, 2011

United Nations Headquarters in New York
UN Photo/Steven Bornholtz, 2011



United Nations Committee of Experts on Global Geospatial Information Management with Member States, Academia, Private Sector, Geospatial societies and the United Nations system
UN Photo, 2019

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Earth Observation specialist

Geospatial analyst

GIS data manager

Geospatial systems administrator

GIS application developer

Geospatial data scientist

Surveyor

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