



United Nations

Geospatial

2021

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MAPPING 17 SUSTAINABLE DEVELOPMENT GOALS

A Showcase of the Power of Geospatial Data & Cartography

The **science** to
analyze patterns
and trends of
our world

The **technology**
to visualize
the challenges
of our time

The **art** to
tell stories and
advocate
for our Goals



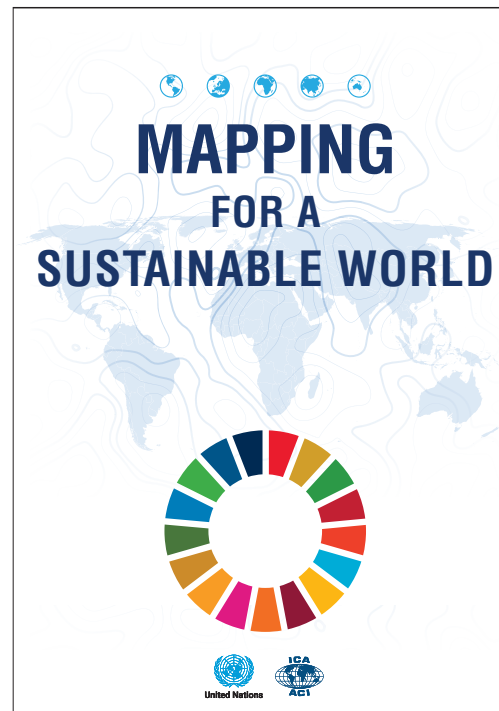
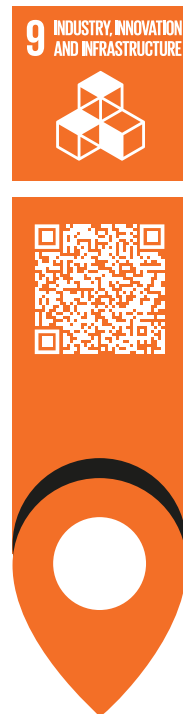
Create Your Own SDG Map!
Find our book on cartography online.

Scan respective QR codes to look
into the maps on each Sustainable Development Goals.

MAPPING 17 SUSTAINABLE DEVELOPMENT GOALS

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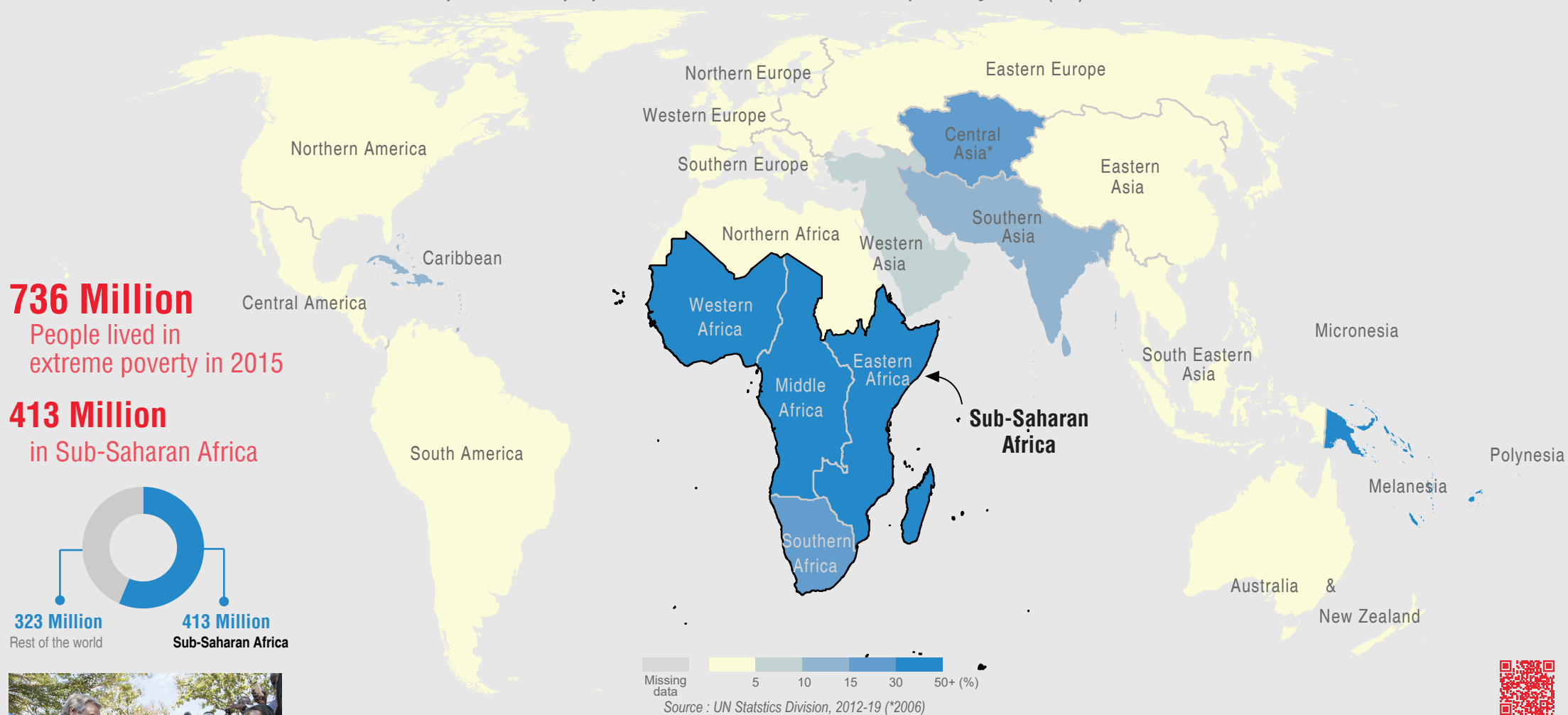




END POVERTY IN ALL ITS FORMS EVERYWHERE

By 2030, eradicate extreme poverty for all people everywhere

Proportion of population below international poverty line (%)



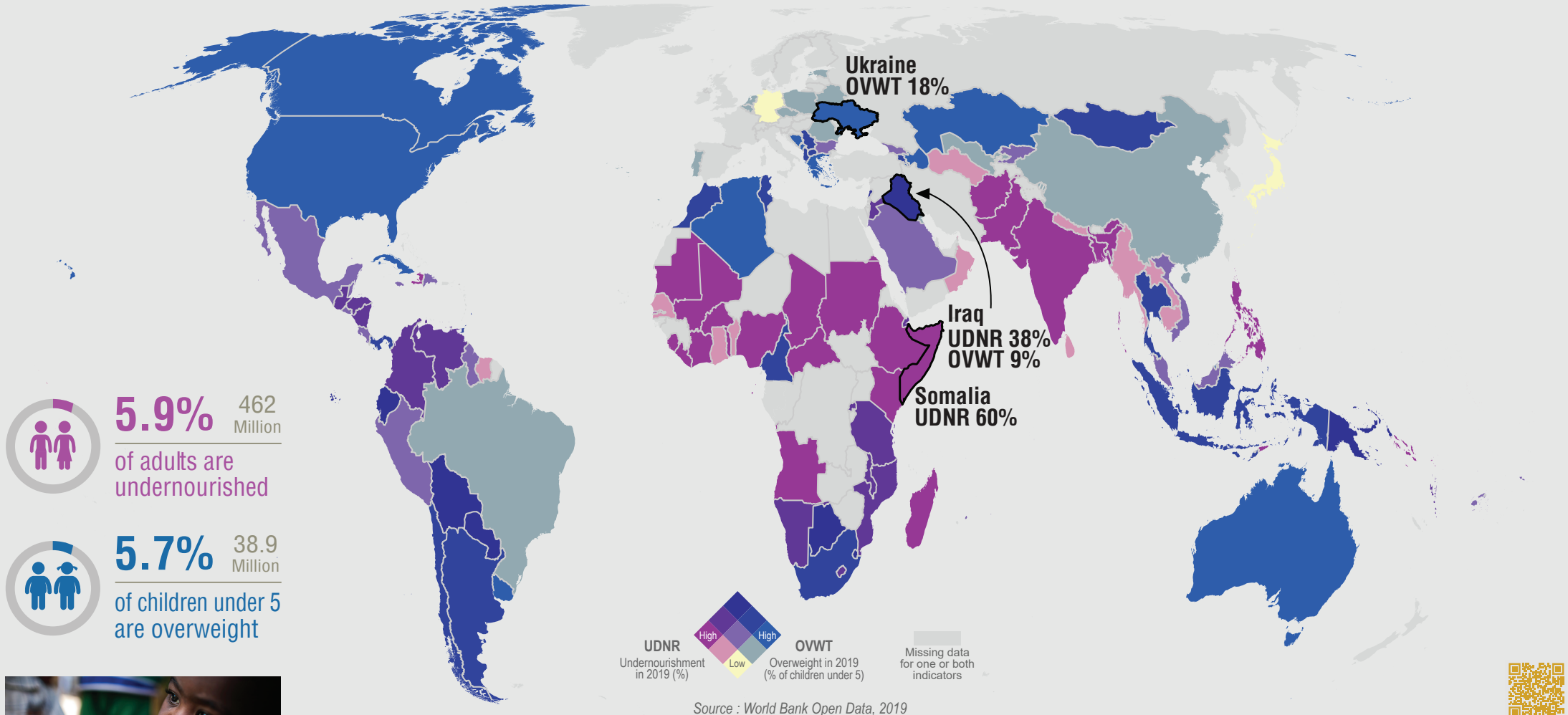
◀ UN Secretary-General meets people living in a camp for internally displaced persons (IDPs) in the town of Bangassou, Central African Republic.

UN Photo - Eskinder Debebe, 2017

▲ Today, 10 per cent of the world population still live in extreme poverty. The majority of people living on less than \$1.90 a day live in sub-Saharan Africa. The map depicts indicator 1.1.1 (most current value 2012–2019) on the proportion of population living below the international poverty line by sub-regions and intermediary regions. These country groupings in larger regions are defined under the Standard Country or Area Codes for Statistical Use (known as M49 standard).



By 2030, end all forms of malnutrition
Prevalence of undernourishment (%) and overweight (% of children under 5)



▲ A child eats at a camp for the internally displaced persons near Tawila, Darfur, where more than 8,000 women and children benefit from nutrition programmes.

UN Photo - Albert Gonzalez Farran, 2014

▲ Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients and SDG Target 2.2 aims to end all forms of malnutrition worldwide. The map combines two indicators from the World Bank Open Data on the prevalence of undernourishment (% of the population, in purple), and the prevalence of overweight (in % of children under 5, in blue) in 2019. This representation invites to consider the diverse forms and geographic distribution of malnutrition observed worldwide.



By 2030, end preventable deaths of newborns and children under 5 years of age
Children under 5 years mortality rate per 1,000 live birth in 2019

10.4 Million
deaths of children under
5 years of age

8.4 Million
in Sub-Saharan Africa &
Southern Asia

5.5 Million
Sub-Saharan Africa

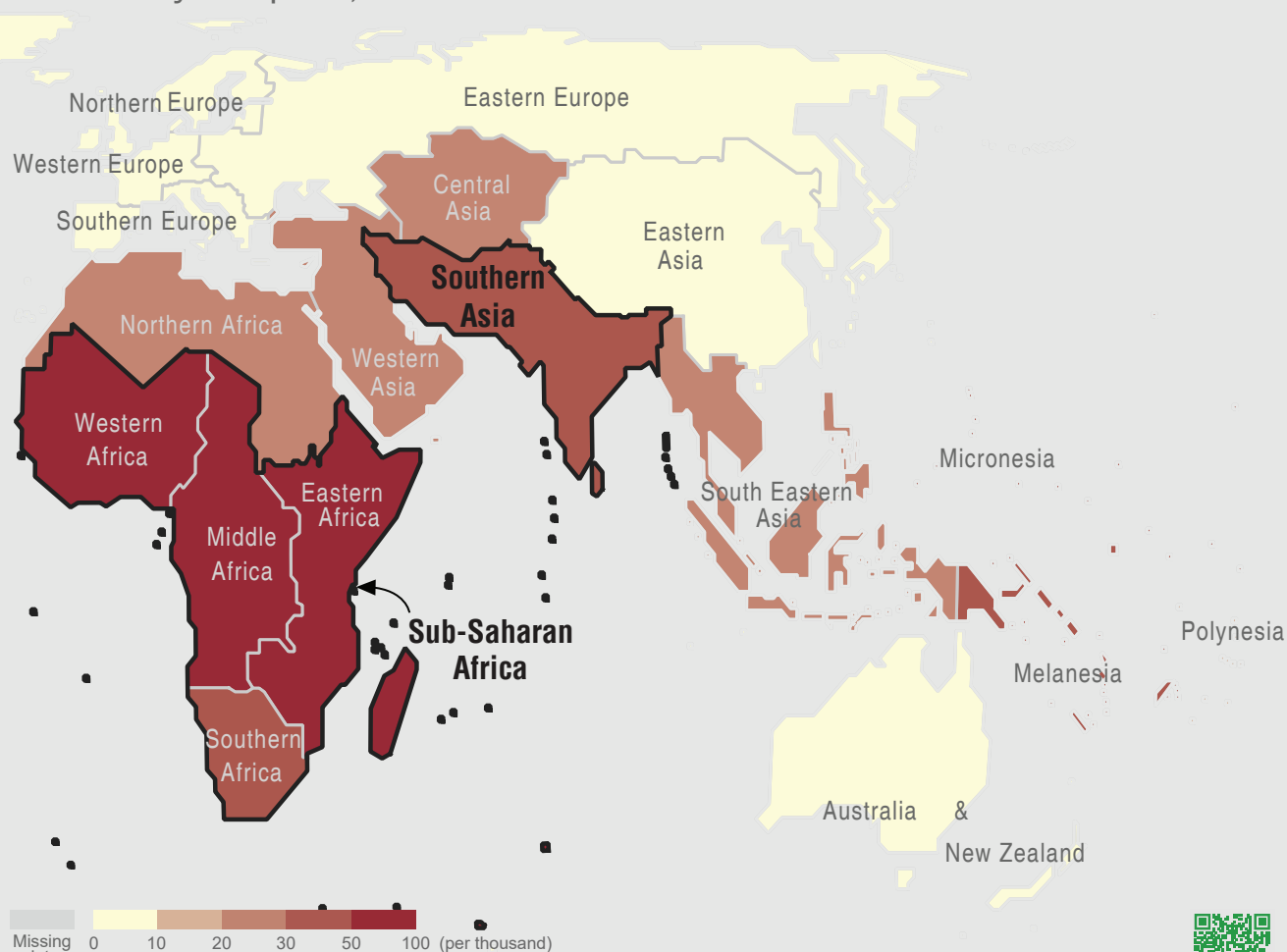
2.9 Million
Southern Asia

Rest of
the world



◀ A 20-years-old mother lies next to her one-day-old baby, covered in blankets, in Sub District Hospital in Umbad Block, Maharashtra, India.

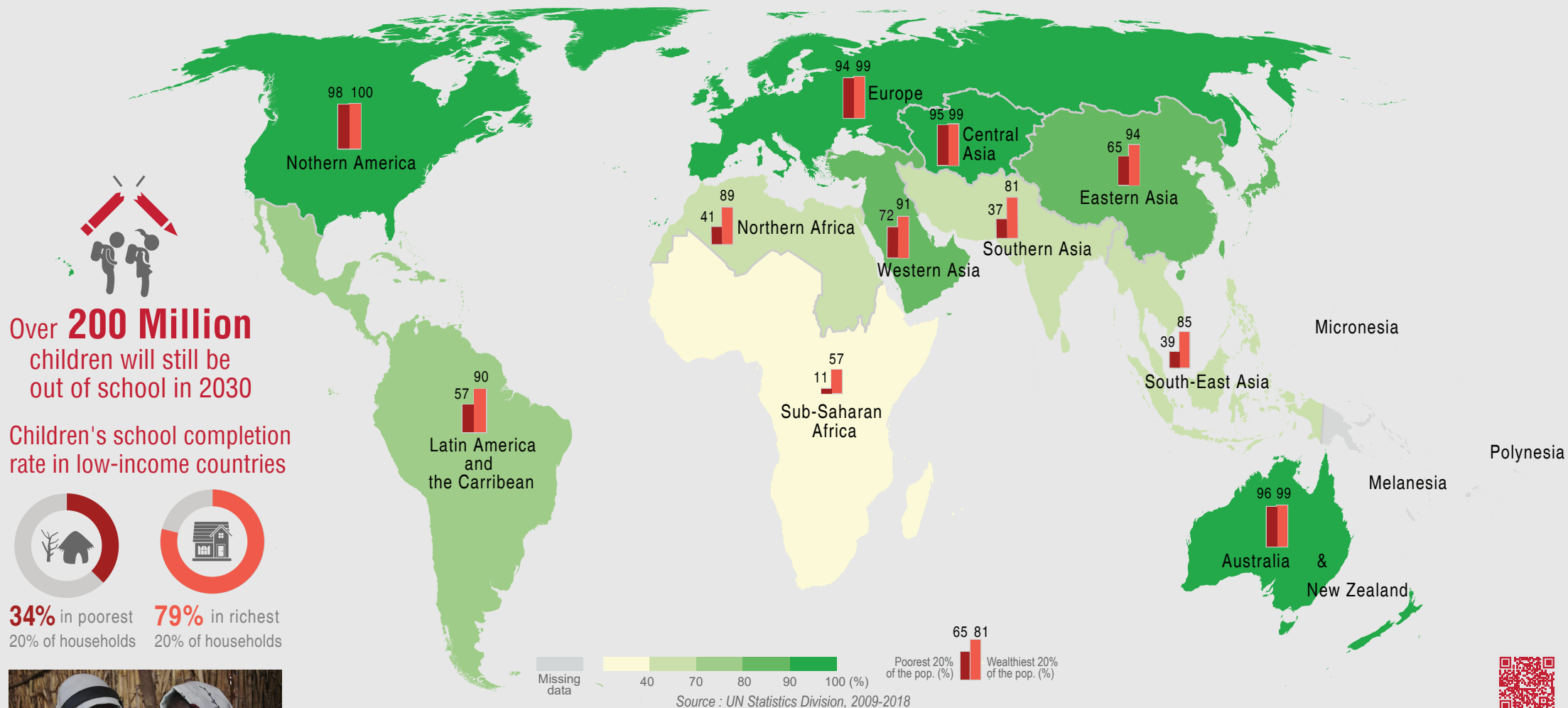
UNICEF Photo - Ashutosh Sharma, 2017



Source : UN Statistics Division, 2019

▲ Globally 2.4 million children died in the first month of life in 2019. A child born in Sub-Saharan Africa or in Southern Asia is 10 times more likely to die in the first month than a child born in a high-income country. Four out of every five deaths of children under age five occur in these regions. The map depicts indicator 3.2.1 of children under 5 years mortality rate per 1,000 live birth in 2019.

By 2030, ensure quality education for all people everywhere
Completion rate of lower secondary educational level for decade 2009-2018 (%)

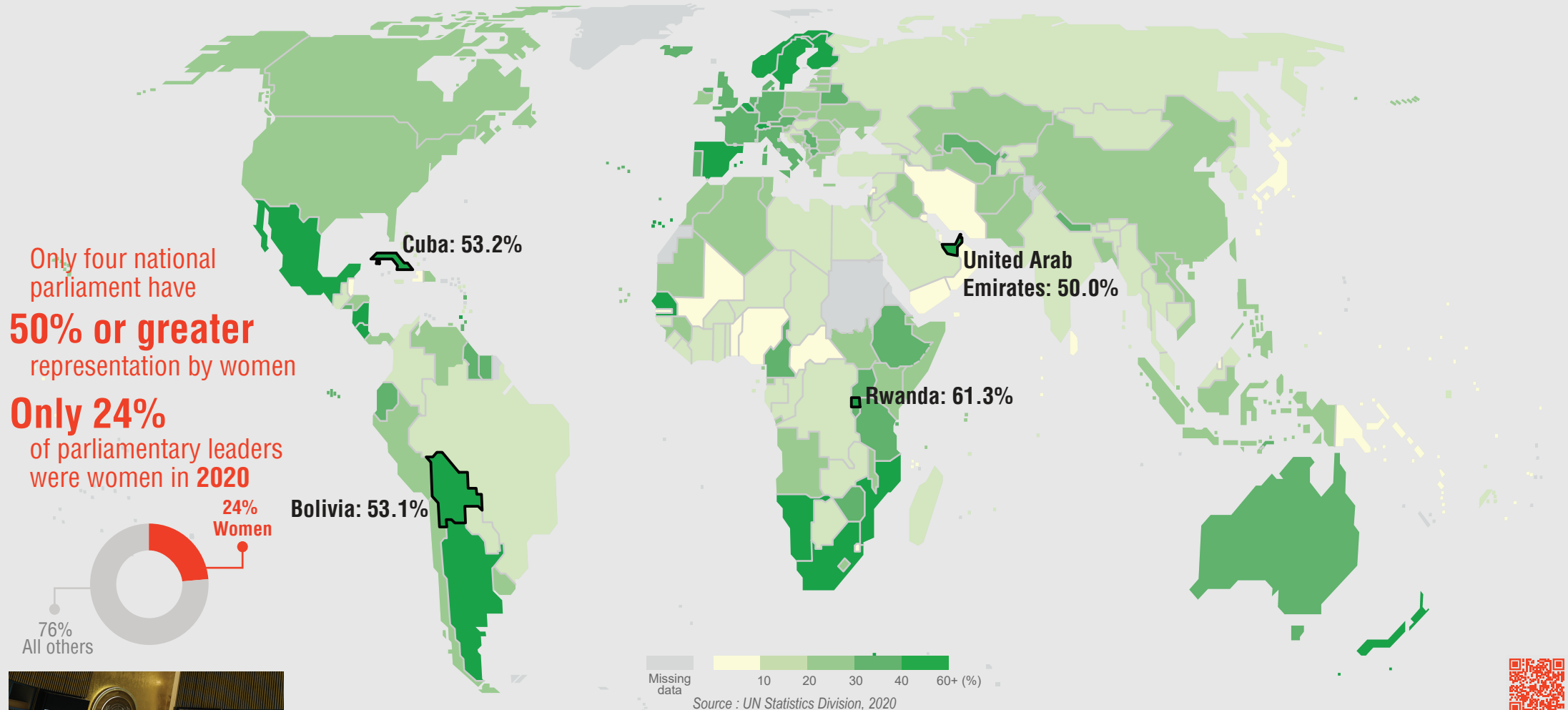


◀ Children use their tablet and work with each other at the UNICEF supported Debate e-Learning Centre in a village on the outskirts of Kassala in Eastern Sudan.
UNICEF Photo - Noorani, 2020

▲ It is estimated that 101 million additional children and young people (from grades 1 to 8) fell below the minimum reading proficiency level in 2020 owing to the consequences of the pandemic, which wiped out the education gains achieved over the past 20 years. Just before the pandemic, 53 per cent of young people were completing secondary school globally, although the figure for sub-Saharan Africa was only 29 per cent. The map depicts indicator 4.1.2 (mean for decade 2009-2018) on the completion rate of lower secondary educational level by sub-regions.

Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making

Proportion of seats held by women in National Parliaments in 2020 (%)



◀ Opening of the sixty-fourth session of the Commission on the Status of Women where Member States adopted a declaration for Action on gender equality, 25 years ago.

UN Photo - Loey Felipe, 2020

▲ More girls are going to school, fewer girls are forced into early marriage, more women are serving in parliament and positions of leadership, and laws are being reformed to advance gender equality. Despite these gains, challenges remain: discriminatory laws and social norms remain pervasive, and women continue to be underrepresented at all levels of political leadership as depicted on the map showing indicator 1.5.1 (2020) on the proportion of seats held by women in national parliaments.



By 2030, ensure availability and sustainable management of water and sanitation for all
Predicted water stress in 2030 and proportion of safely treated domestic wastewater flows (%)

Only 56%
of household
wastewater is safely
treated in 2020

Over 25%
of lands could be severely
water stressed by 2030

Freshwater withdrawal as a proportion
of available freshwater resources (2018)

0 20 40 60 80 (%)

Northern Africa & Western Asia

Central and Southern Asia

Eastern and South-Eastern Asia

European and Northern America

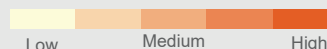
Latin America and the Caribbean

Sub-Saharan Africa

Oceania

Missing
data

Predicted water stress level in 2030



Source : World Resources Institute
Aqueduct, Gassert et al. 2013

Proportion of safely treated domestic wastewater flows



Source : UN Statistic Division, 2020

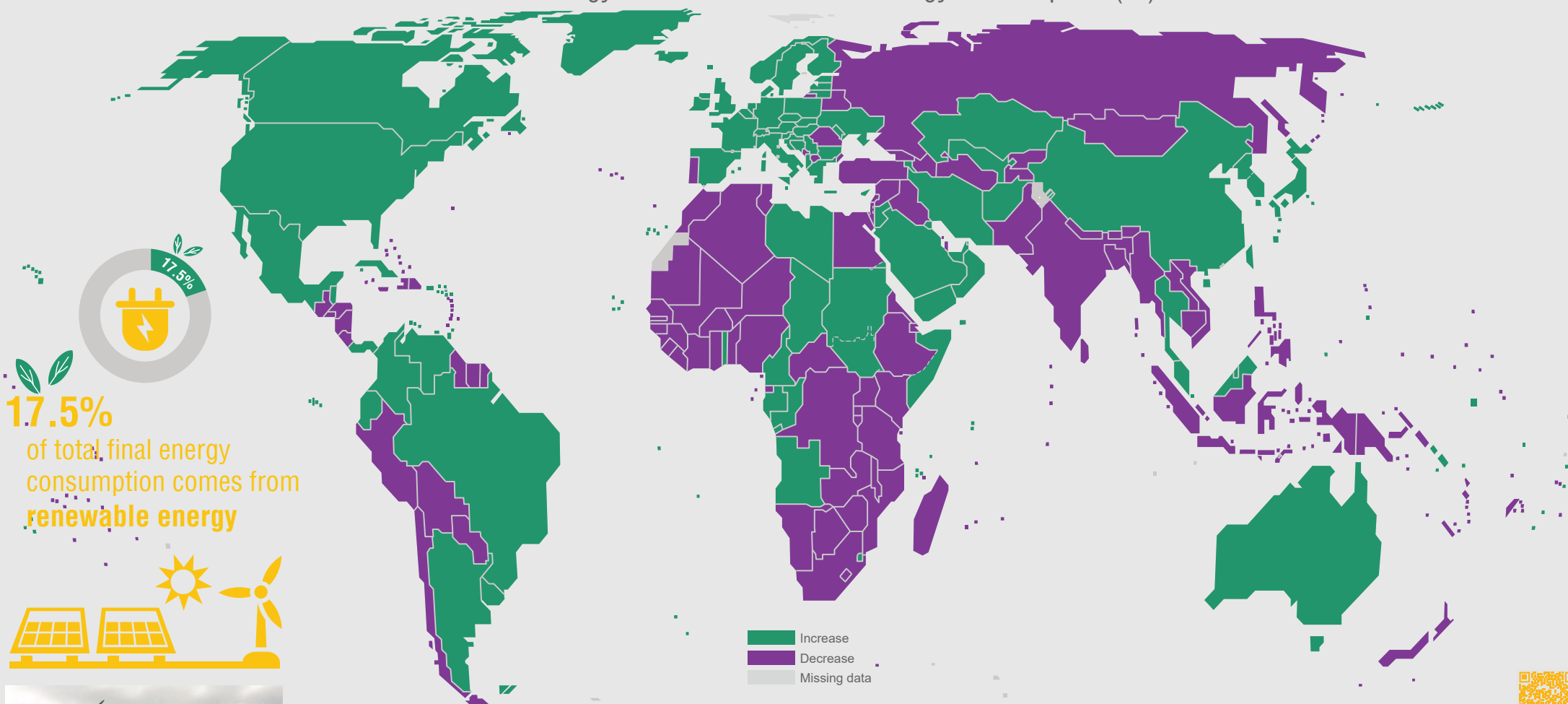
◀ A girl and a boy drinking water from a tap built to ensure those in need receive timely, life-saving and gender responsive water, sanitation and hygiene assistance in Syria. UNICEF - Abdulaziz-Aldroubi, 2018

▶ Predicted water stress levels in 2030 from the Water Resources Institute are high if no efforts are taken in adopting strategies to solve the Sustainable Development Goals. The estimates are based on projection models of what is often referred to as "business as usual", SSP3 socio-economic and RCP8.5 climatic scenarios*. The map also depicts indicator 6.3.1 as point values (in 2020) showing the proportion of safely treated domestic waste waterflows.

* respectively, by the International Institute of Applied Systems Analysis (IIASA) and the Intergovernmental Panel on Climate Change (IPCC).

By 2030, increase substantially the share of renewable energy in the global energy mix

Renewable energy share in the total final energy consumption (%)



Source : UN Statistics Division, 2010-2018




◀ A view of the Middelgrunden offshore wind farm. The wind farm was developed off the Danish coast in 2000 and consists of 20 turbines.

UN Photo - Eskinder Debebe, 2009

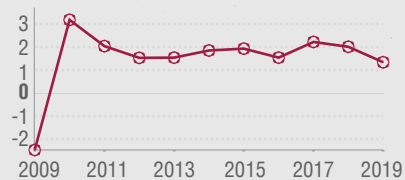
▲ Millions of people throughout the world still lack access to electricity and improving energy efficiency, and progress on facilitating access to clean cooking fuels and technologies is slow. Here, there are no specific regional dynamics but rather a heterogeneous distribution of countries who have, or not, increased their share of renewable energy in the total energy consumption. The map depicts changes on portion of renewable energy in the total final energy consumption between 2010 and 2018 based on Indicator 7.2.1.

Sustain per capita economic growth in accordance with national circumstances

Annual growth rate of real GDP per capita (%)

1.6 Billion 
workers in the informal
economy risk losing their
livelihood during the
pandemic

The world's GDP per capita growth
(Annual %)



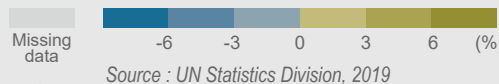
◀ Upland women weed their rice fields, an integrated method of agro-forestry, in Mokpon Village, Laos
UN Photo - Lamphay Inthakoun 2012

Libya: 8.29%

Venezuela:
-34.15%

Zimbabwe:
-9.4%

Timor - Leste:
16.41%



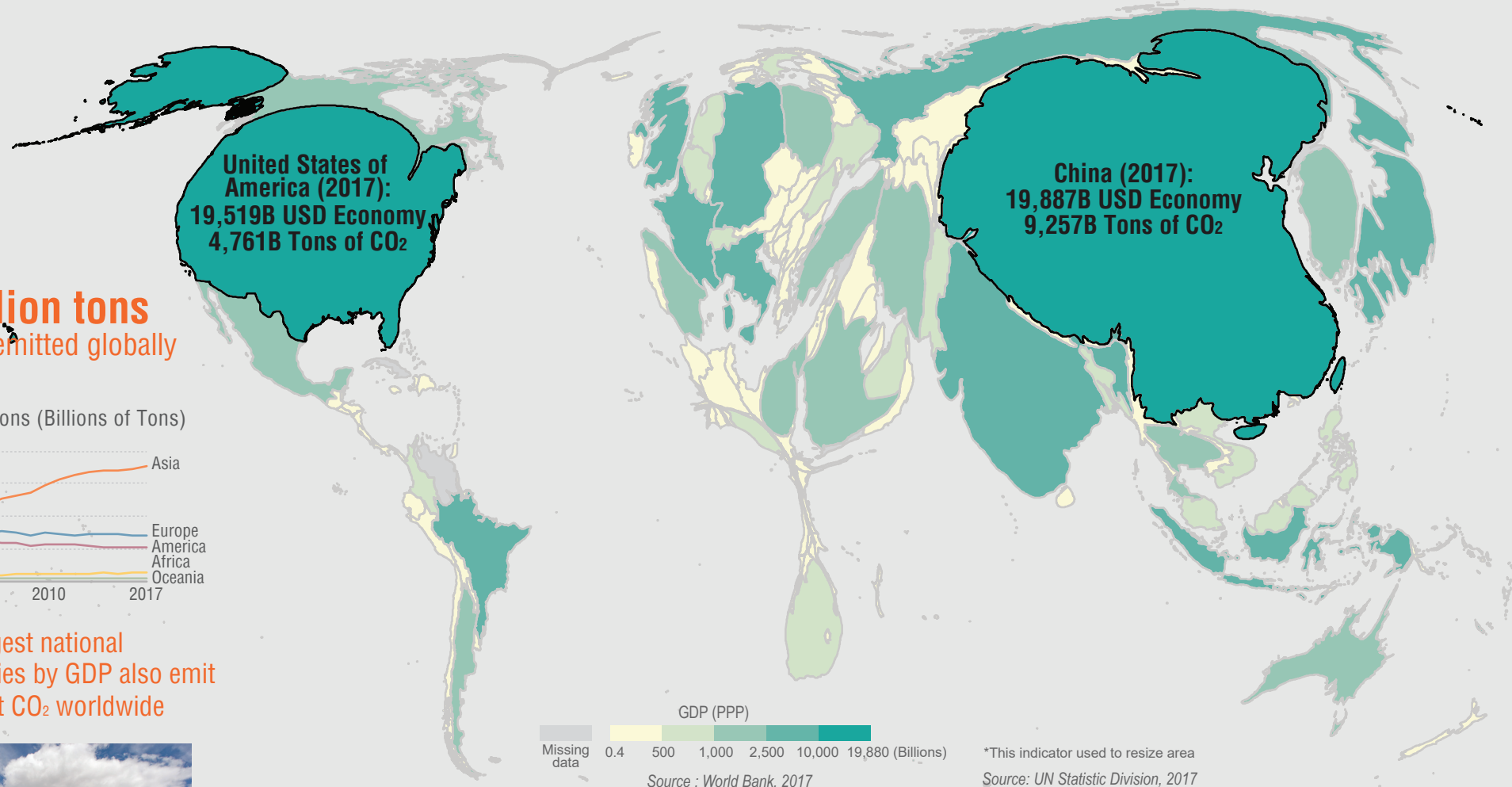
Source : UN Statistics Division, 2019

▲ Following average growth of about 2 per cent from 2014 to 2018, global real GDP per capita increased by only 1.3 per cent in 2019 and is estimated to have declined by 5.3 per cent in 2020 owing to the pandemic. Mapping indicator 8.1.1 (most current value in 2019) on the annual growth rate of real GDP per capita using a diverging colour scheme shows the higher growth are represented in dark olive green and higher decrease are represented in dark blue.



Upgrade infrastructure and retrofit industries to make them sustainable

CO₂ emissions from fuel combustion* and Gross Domestic Product Purchasing Power Parity (Billions of USD)



◀ Mongolian family uses solar panels, sponsored by the United Nations Development Fund, to generate power for their ger, a traditional Mongolian tent, in Tarialan in Mongolia.

UN Photo - Ekinder Debebe, 2009

▲ Estimates show the world is still heading toward a global temperature rise over 1.5°C by the end of the century despite commitments from countries to reduce CO₂ emissions. The cartogram, a type of map which has its geographic features altered based on a proportional value, shows total CO₂ emissions from fuel combustion by countries (indicator 9.4.1 of 2017). In addition, the colors represent the Gross Domestic Product Purchasing Power Parity. The cartogram reveals that the northern hemisphere has a disproportionate responsibility in reducing CO₂ emissions through sustainable infrastructure and industries.



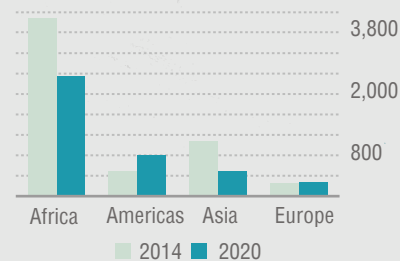
Facilitate orderly, safe, regular and responsible migration and mobility of people

Countries with migration policies by policy domain and number of people who died or disappeared in the process of migration

54% countries
with data have a
comprehensive set of
migration policies



The sum of total deaths and
disappearances recorded during
migration in 2014 and 2020 *

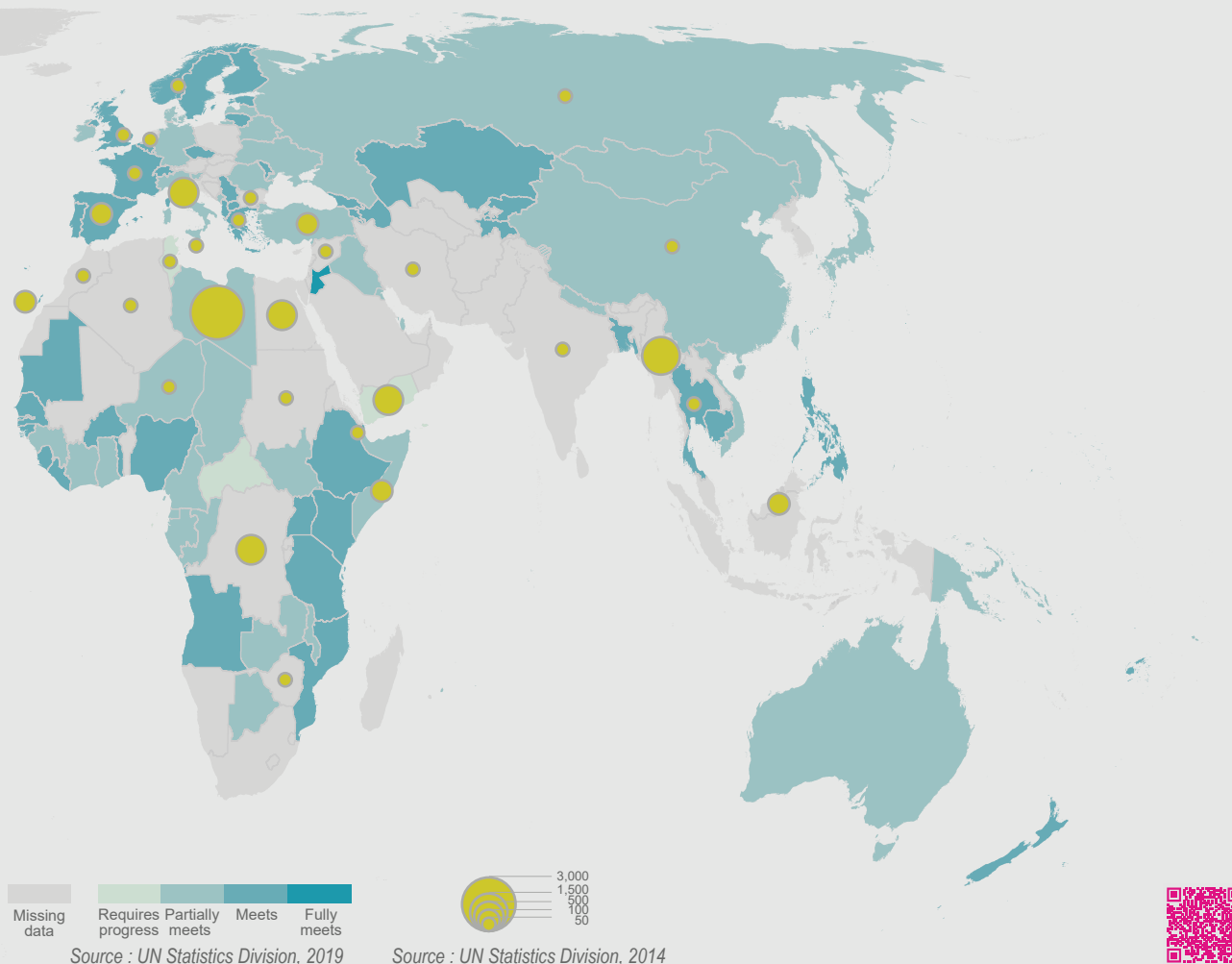


*No deaths and disappearances reported for Oceania



◀ Children pose in a camp for internally displaced people (IDPs) in Port-au-Prince, Haiti.

UN Photo - Logan Abassi 2012.



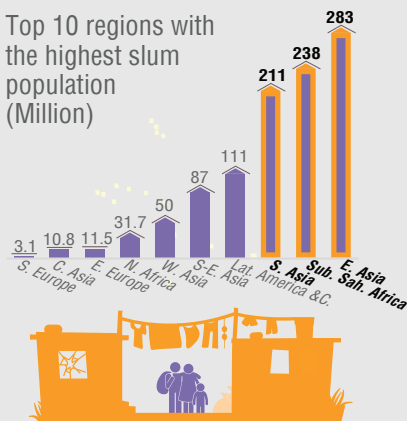
▲ Inequality within and among countries is a persistent cause for concern, for example, the proportion of the global population who are refugees has more than doubled since 2010. The indicator 10.7.2 (most current value 2019) shows countries with migration policies, by all domain of policies, and the indicator 10.7.3 (in 2014) of the total deaths and disappearances recorded during migration.

By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

Proportion of urban population living in slums, informal settlements or inadequate housing in 2018 (%)

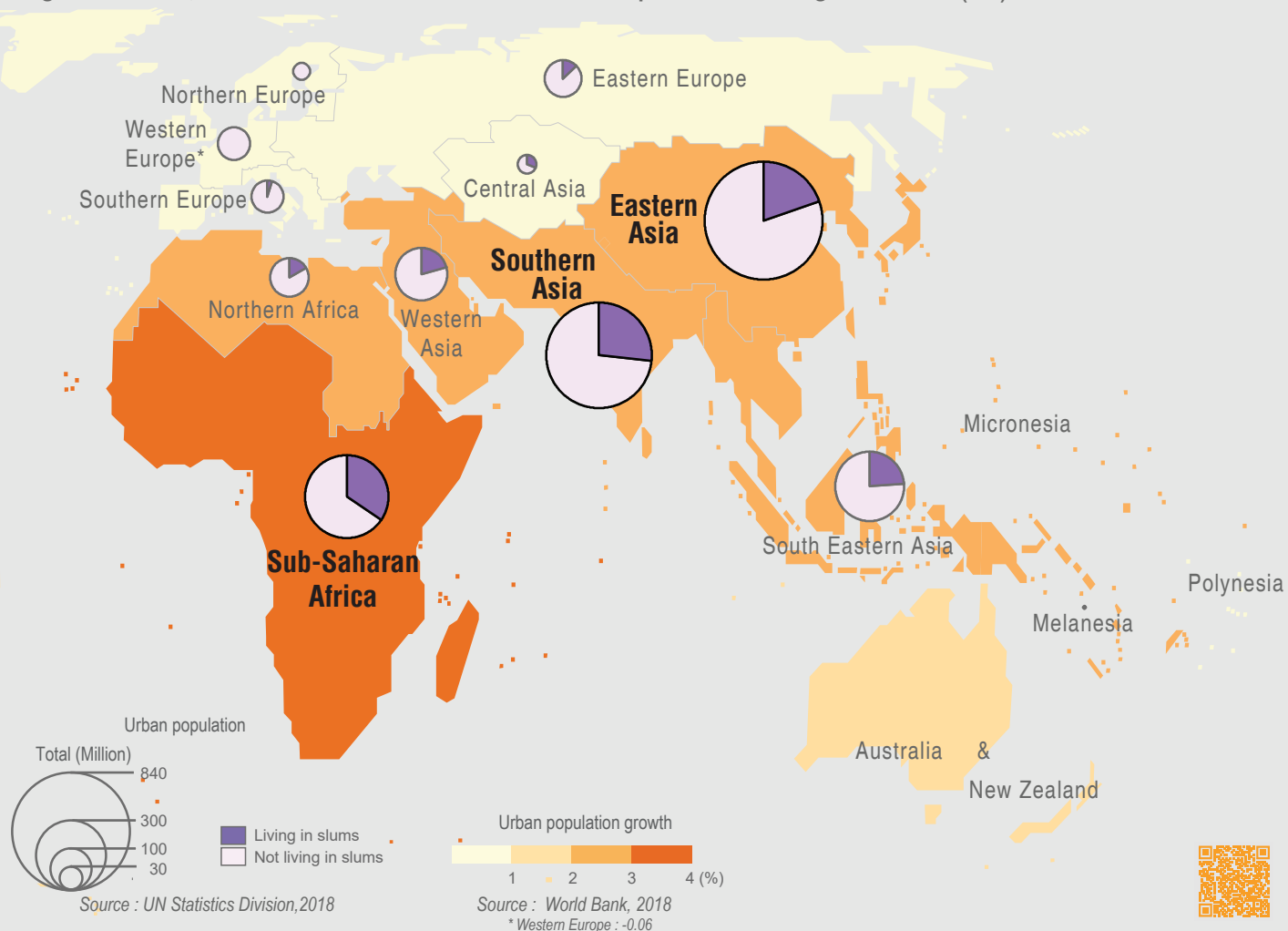
Around 70%
of the more than
1 billion
slum dwellers reside
in **three regions**

Top 10 regions with
the highest slum
population
(Million)



◀ Children in Kallayanpur slum, one of the urban slums in Dhaka, in Bangladesh.

UN Photo - Kibae Park, 2010



▲ Rapid urbanization is resulting in a growing number of slum dwellers, inadequate and overburdened infrastructure and services, worsening air pollution and unplanned urban sprawl. The background colours indicate the urban population growth (annual % in 2018), while the graduated symbols show the amount of urban population per region (in millions in 2018). Finally, the pie chart reveals the proportion of urban population living in slums, informal settlements or inadequate housing per regions (indicator 11.1.1 in 2018).



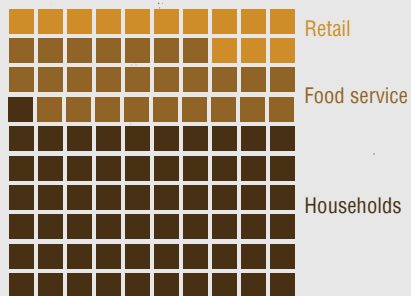
By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses

Food waste (Tonnes) and food waste per capita (Kg)

17% of total global food production may be wasted

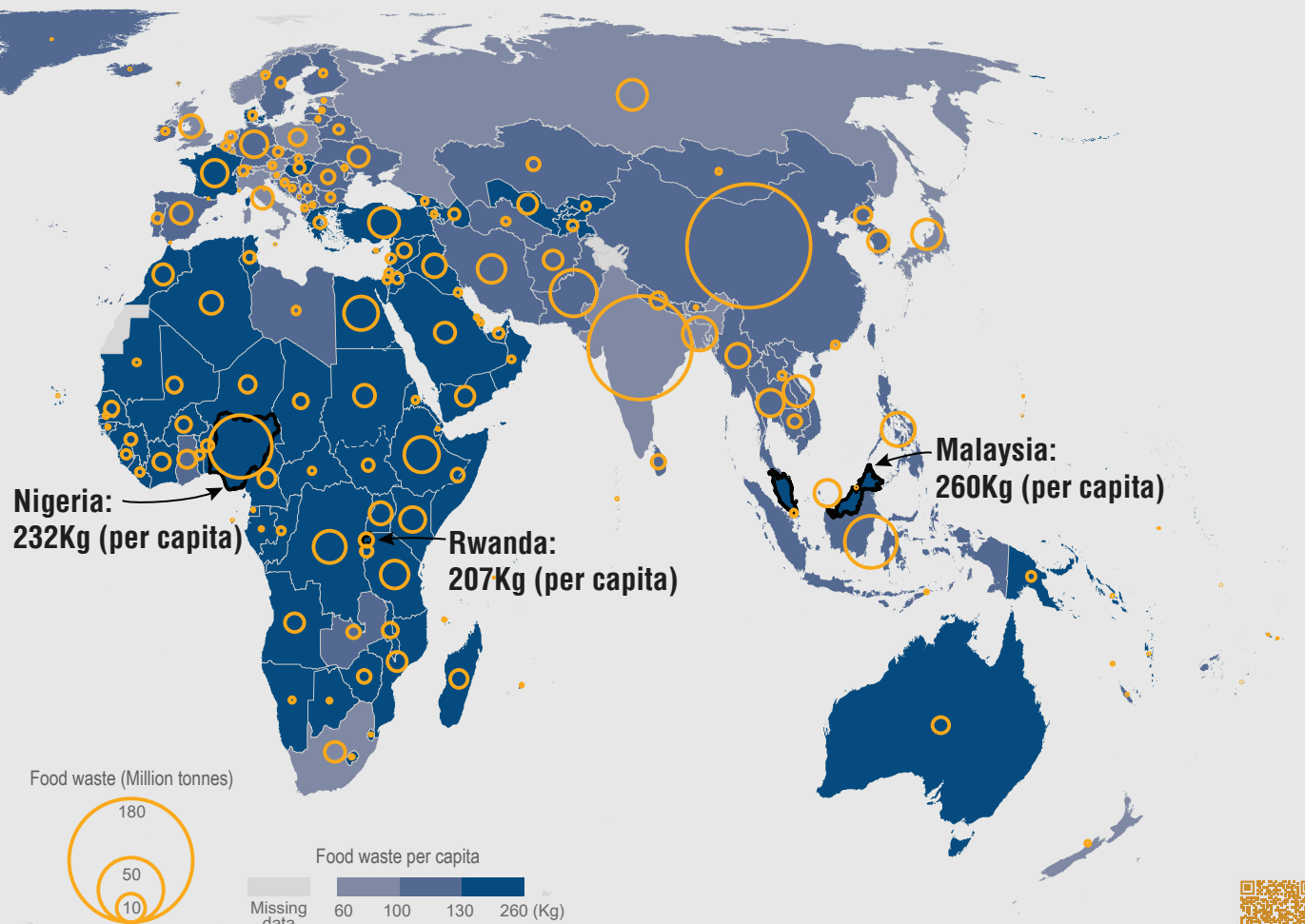
921 Million tonnes of food waste generated in 2019

Food waste by different level



◀ Women and children search a garbage dump for food and cans to sell in Dili in Timor-Leste.

UN Photo - Martine Perret, 2009



Source : UN Statistics Division, 2019

▲ Worldwide consumption and production rest on the use of the natural environment and resources in a way that continues to have destructive impacts on the planet. Economic and social progress over the last century has been accompanied by environmental degradation that is endangering the very systems on which our future development - indeed, our very survival - depends. The indicator 12.3.1 shows the importance of food waste in southern and eastern Asia (graduated symbols), however, food waste per capita shows high food waste in USA, Mexico, Malaysia, and many countries in Africa and Oceania (background colour).





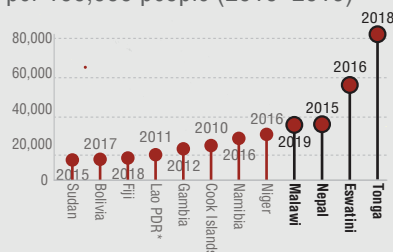
TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Number of people affected by disaster (number) and directly affected persons attributed to disasters per 100,000 population (number)

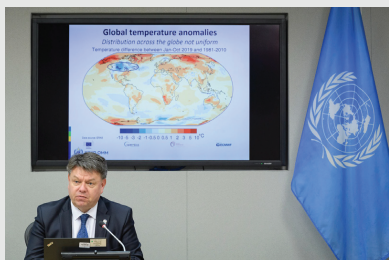
Climate change
affected more than
39 million
people in 2018

Only 85 countries have
plans to meet the Sendai
framework to reduce
disaster risk

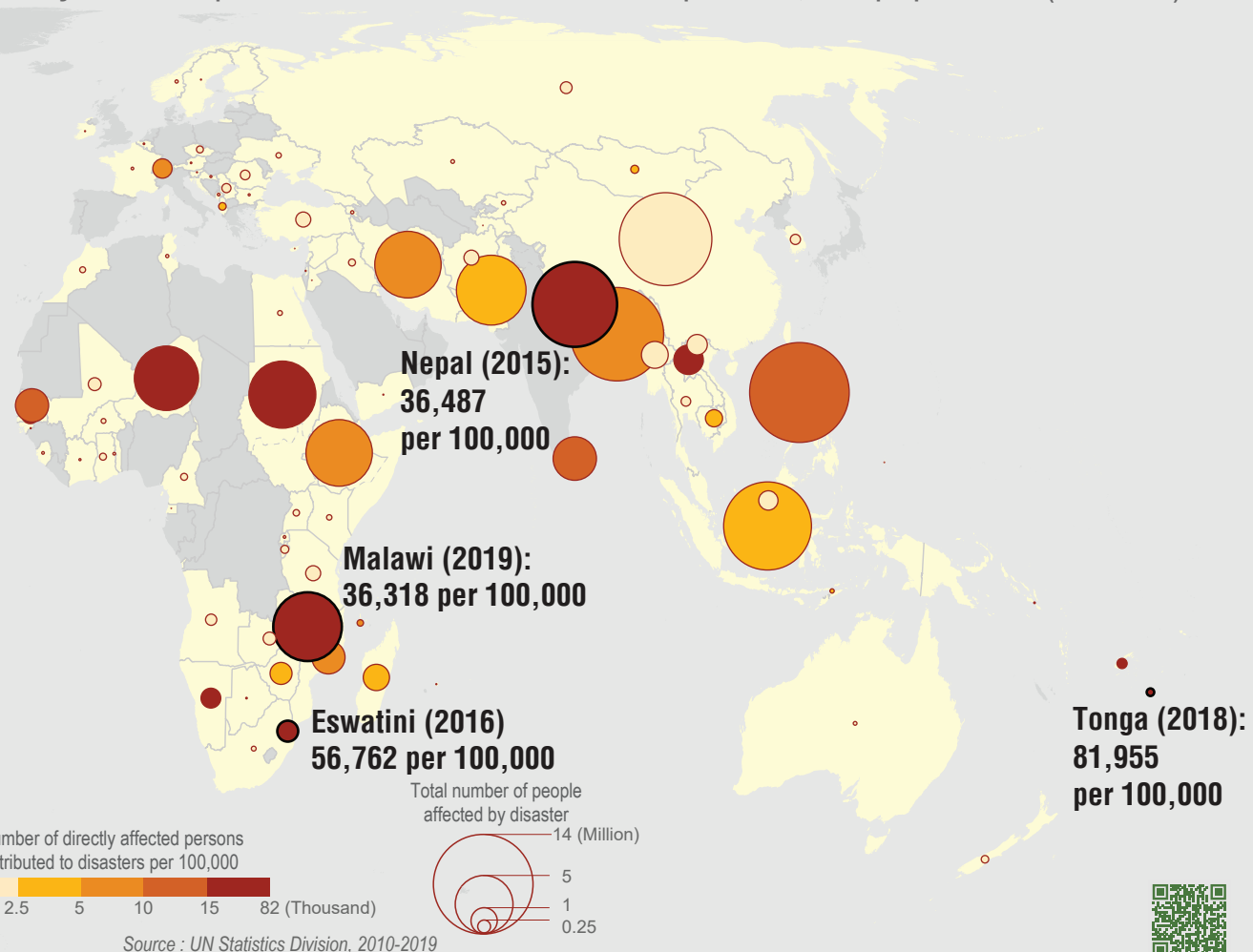
Most affected countries by disasters
per 100,000 people (2010–2019)



* Lao PDR : Lao People's Democratic Republic



Secretary-General of the World Meteorological Organization (WMO) briefs reporters on its State of the Climate 2019 Report. A world map of global temperature differences between 1981–2010 and 2019 is shown in the background. UN Photo - Manuel Elias, 2020



Climate change is affecting every country on every continent - weather patterns are changing, sea levels are rising, and weather events are becoming more extreme. Climate change affects everyone but developing countries and marginalized populations often shoulder a disproportionate burden from climate-related hazards such as severe weather, fires and flooding, and food and water scarcity. In recent years, indicator 13.1.1 (highest value between 2010–2019) shows that the top five countries of most affected persons attributed to disasters per 100,000 people include Tonga, Eswatini, Nepal, Malawi, and Niger.



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

Marine debris count density (size > 200mm)

8 Million tonnes

of **plastic** end up in oceans every year

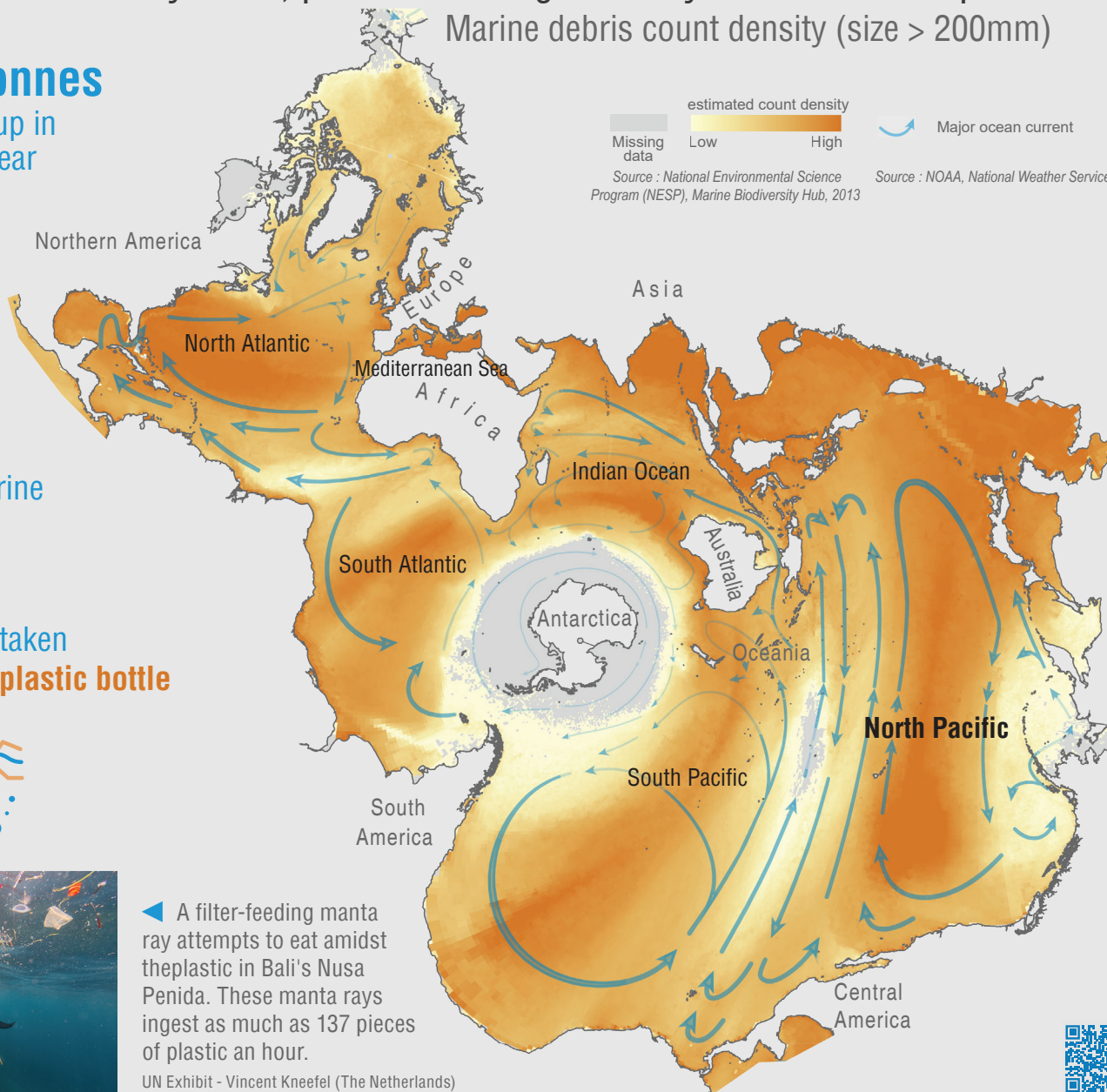
80% of all marine debris studied is **plastic**

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 Kneefel (The Netherlands)



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)

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

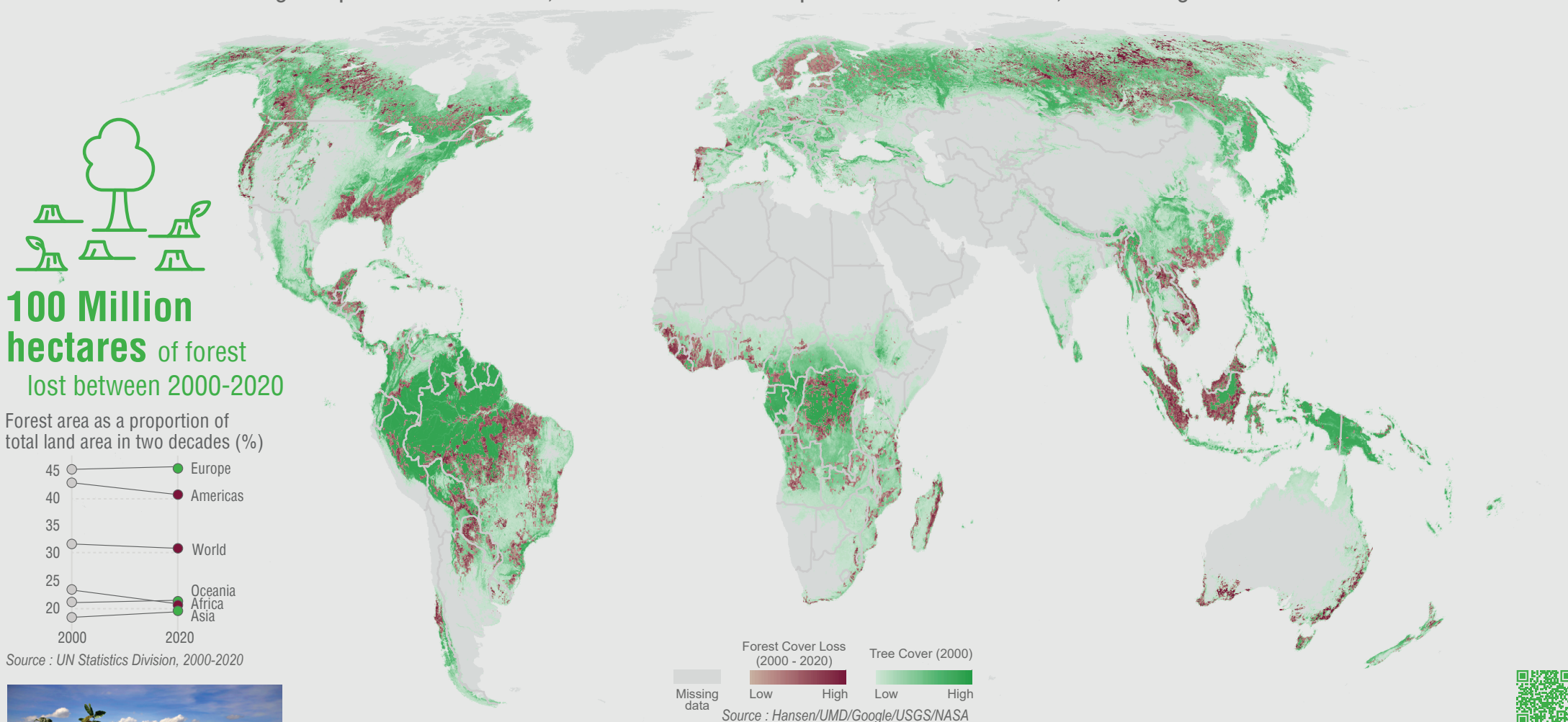
Source : Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, Borroero JC, et al. (2014) Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. PLoS ONE 9(12): e111913. <https://doi.org/10.1371/journal.pone.0111913>

◀ 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.



Progress towards sustainable forest management

Global forest loss during the period 2000–2020, defined as a stand-replacement disturbance, or a change from a forest to non-forest state



◀ Grace is a farmer and a leading member of the forest community in Ainabkoi. She works on a voluntary basis to protect the forest, to provide material to the Kenya Forest Service rangers.

UN Photo - Riccardo Gangale, 2012

▲ Deforestation and forest degradation, continued biodiversity loss and the ongoing degradation of ecosystems are having profound consequences for human well-being and survival. Currently, thirteen million hectares of forests are being lost every year. Deforestation and desertification pose major challenges to sustainable development and affect people in poverty. From 2000 to 2020, forest area increased in Asia, Europe and Northern America, but decreased significantly in Latin America and Sub-Saharan Africa.

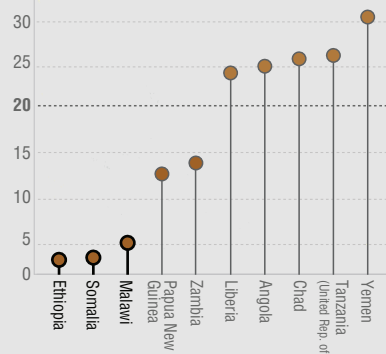


By 2030, provide legal identity for all, including birth registration

Proportion of children under 5 years of age whose births have been registered with a civil authority (% of children under 5 years of age)

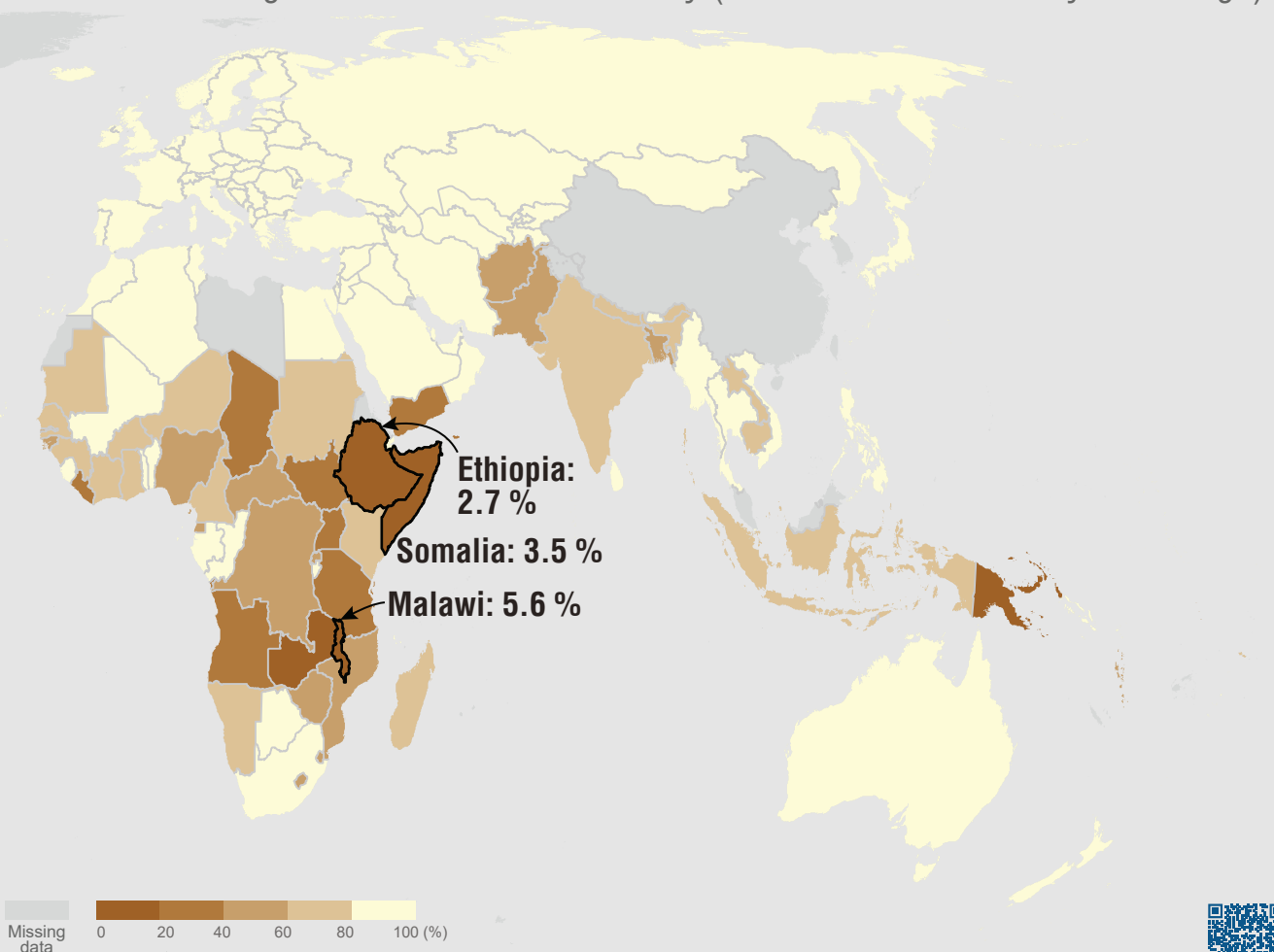
166 Million
children under the
age of 5, or 1 in 4
remain unregistered

Lowest ten country on proportion of
birth registration in 2011-2018 (%)



Displaced children in Aden City from
the city of Taiz due to the conflict, Yemen.

UNICEF - Ahmed Abdulhaleem, 2018



The birth of around one in four children under age 5 worldwide are never officially recorded, depriving them of a proof of legal identity crucial for the protection of their rights and for access to justice and social services. The indicator 16.9.1 (2011-2018) is the proportion of children under 5 years of age whose births have been registered with a civil authority, the countries highlighted in shades of brown show where the gap remains. Oceania, excluding Australia and New Zealand, is the region with the lowest registration rate at 23.1%, followed by Sub-Saharan Africa with 44.8%. War-torn or past conflict countries, such as Somalia, Liberia, Chad or Yemen, exhibit low registration rates.

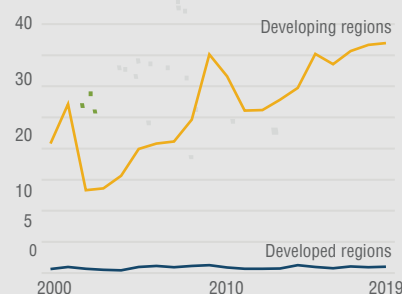
Enhance international support for implementing effective and targeted capacity-building in developing countries

Dollar value of financial and technical assistance (including through N-S, S-S and triangular cooperation) committed to developing countries

US\$ 1Trillion

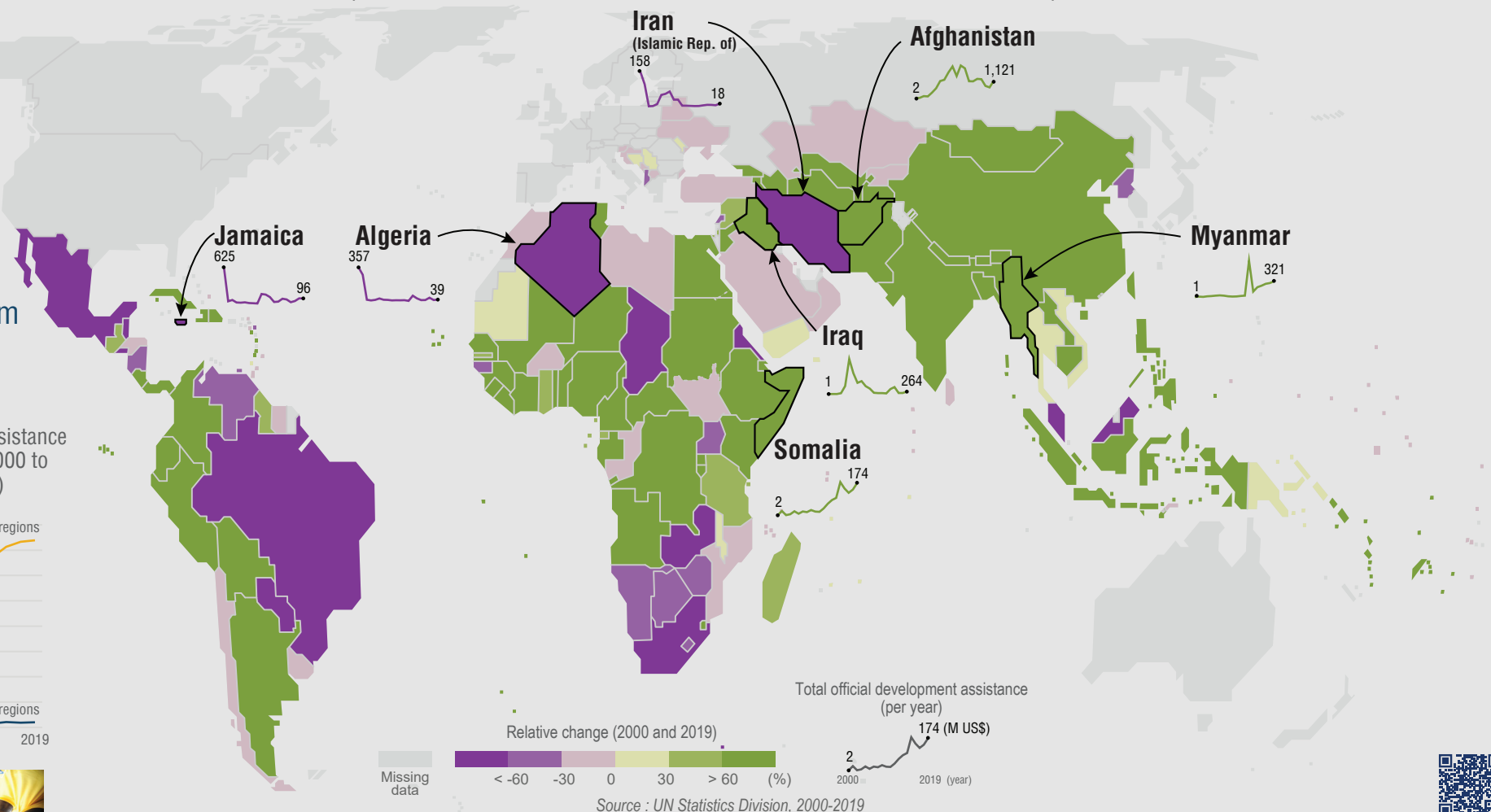
Foreign Direct Investment (FDI) dropped by **40%** from \$1.5 Trillion in 2019 to \$1Trillion in 2020

Total of official development assistance for technical assistance from 2000 to 2019 worldwide (Billion of US\$)



Members of UN Police and the South Sudan Police Services taking part in a rope pulling competition, hold hands in camaraderie, during celebrations to mark the International Day of Peace in Juba.

UN Photo - Isaac Billy, 2011



Strong international partnerships are needed to ensure countries have the means towards the Sustainable Development Goals. North-South, South-South, and triangular cooperation are critical to capacity-building strategies. Values on the maps show indicator 17.9.1 and the relative change of financial and technical contribution in 2000 and in 2019 committed to developing countries, increase in contribution is represented in shades of green, while decrease is in shades of purple. The graph shows the exact trend of contribution throughout the period.