UNHCR
The UN Refugee Agency

UNHCR Data Visualization Guidelines

September 2021

Introduction

The **Data Visualization Guidelines** helps improve the quality of charts and infographics made by UNHCR, the UN Refugee Agency. These guidelines support the effective use of data driven-products to communicate to the public the relevance and impact of UNHCR's work.

The **simplification and standardization of chart elements and colour palettes** will make reading and interpretation of graphs and plots easier and more comfortable. **Consistent and highly recognizable visual components will enhance UNHCR's global brand identity**. The guidelines also simplify the chart production process by providing appropriate tools, for both basic and advanced users.

Therefore, all charts created for UNHCR publications and websites should follow the recommendations in this guidelines document.

The guidelines have been developed by **Information Product Development and Analysis Unit** from the **Global Data Service (GDS)**, with the support of the **Design Unit** and the **Global Brand Unit** from the **Division of External Relations (DER)**. For further guidance or questions, please contact **ipda@unhcr.org**.

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Chart elements

Chart elements: what, where and how

Depending on relevance, UNHCR charts may include the following visual elements.

1. Top bar
2. Figure number
3. Title
4. Subtitle
5. Legend
6. X-axis title
7. Y-axis title
8. X-axis label
9. Y-axis label
10. Grid line
11. Data label
12. Note
13. Source
14. Copyright

All chart elements are recommended to be placed and aligned as shown in the example.

Some elements may be required only in certain conditions or for certain types of charts.

*This example is meant to illustrate all possible chart elements but as a best practice axis-labels/gridlines shouldn't be used together with data labels or the other way around. To avoid repetition and chart congestion, it is recommended to use one approach or the other. Please see the appendix for examples.

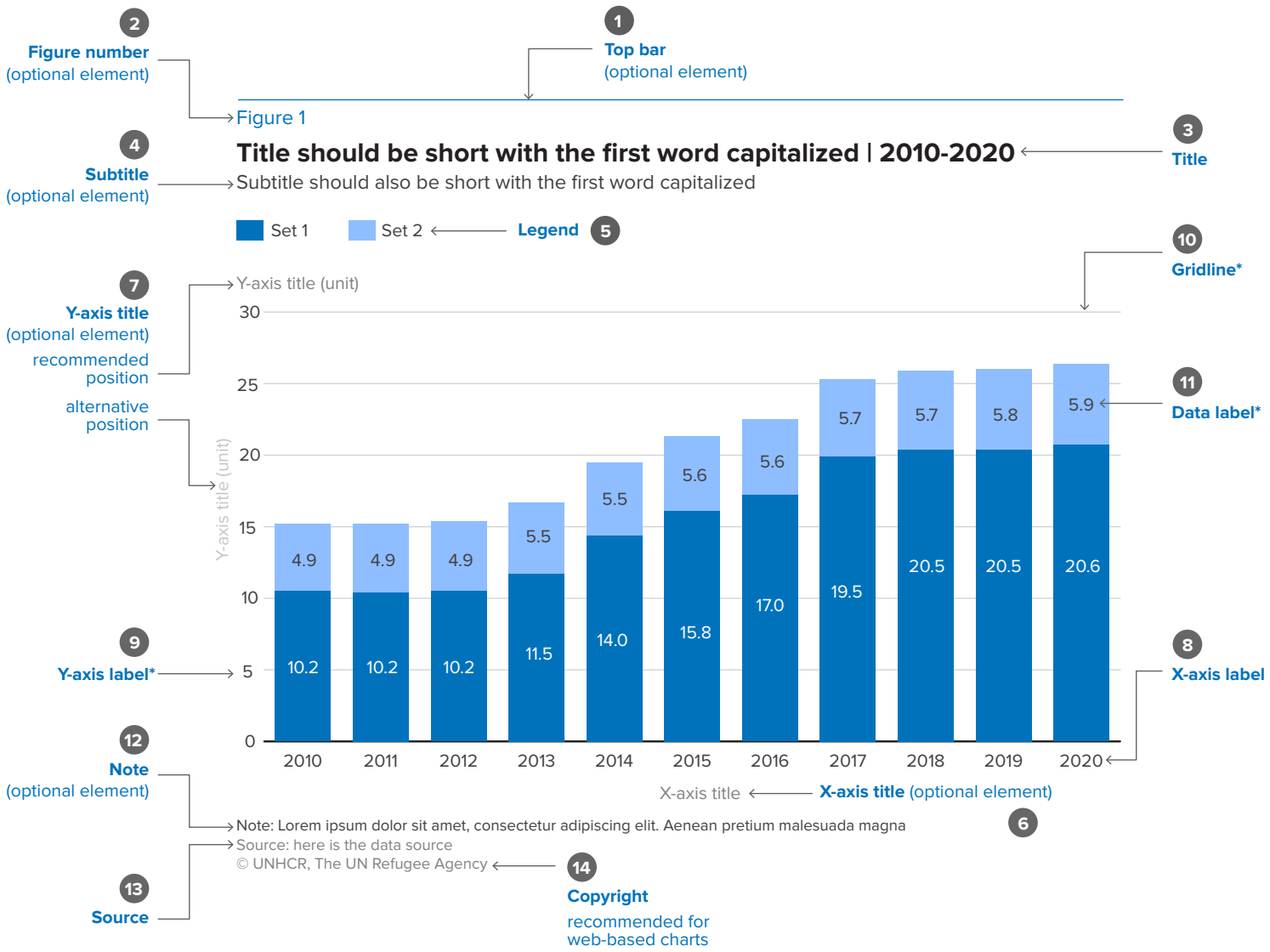


Chart elements: specifications

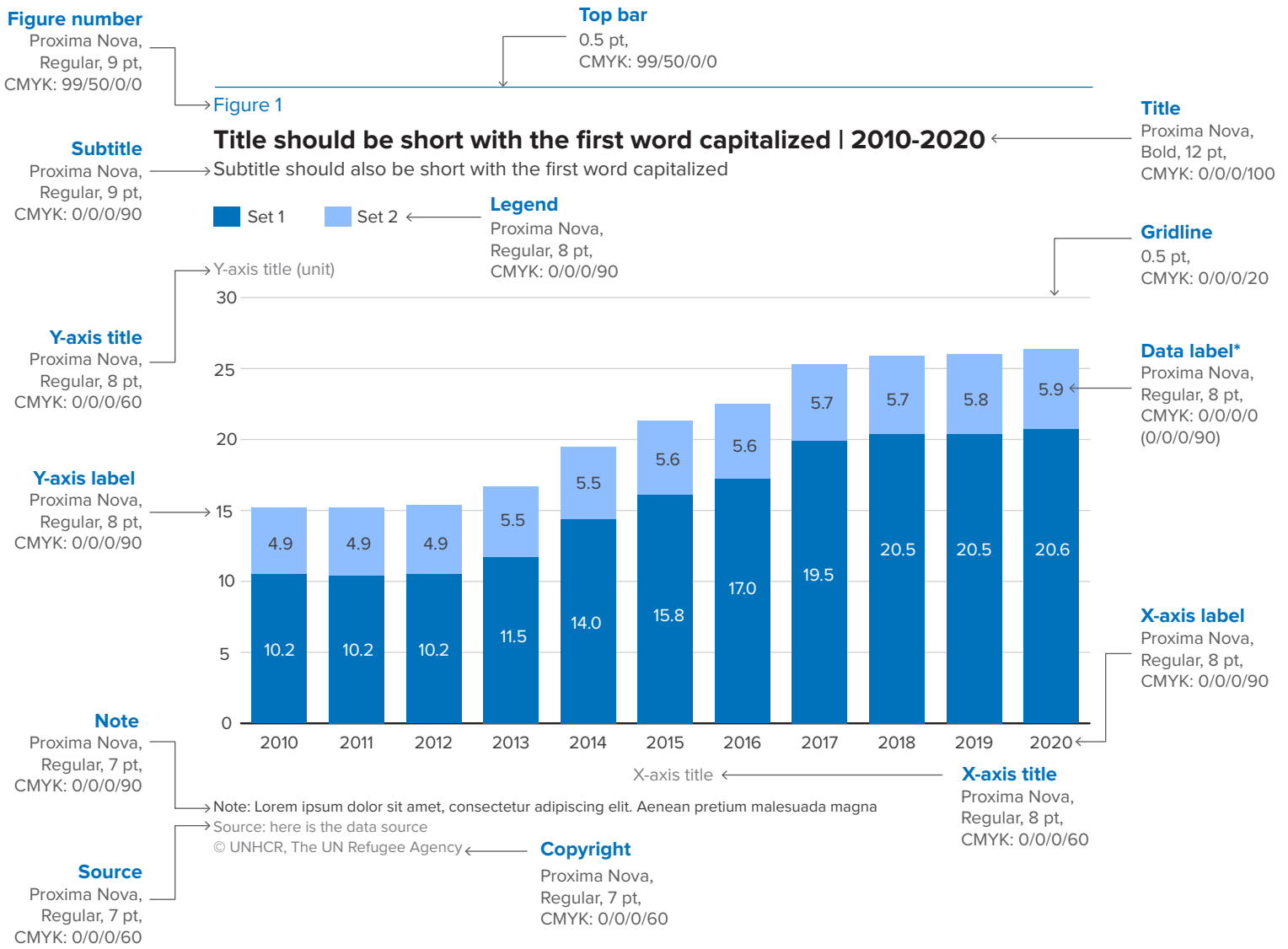
All elements included should follow the specifications below.

Font:
Proxima Nova should be used as primary font. Lato or Arial may be used when Proxima Nova is not available.

Font size:
The font sizes are recommended sizes for print products. They may be adjusted relatively based on the needs, especially for web-based products.

Colour:
Each element should be assigned the colour recommended in the specifications of the mock-up. Colours are given in CMYK, conversion to RGB and HEX colour code can be found on page 8.

*Data labels have two colours: white (0/0/0/0) and dark gray (0/0/0/90). The white colour should be used on dark background, while dark gray should be used on light background.



Data visualization colour palette

Data visualization colour palette

This data visualization colour palette is an extended version of the UNHCR colour palette. It is developed specifically for visualizing data in infographics, maps or charts.

This palette includes six main colours: blue, navy, green, grey, red and yellow. The five-value colour ramps found on page 8 were created based on these main colours for visualizations requiring several shades of the same colour.

The blue colour is the primary colour and should be the predominant colour in all UNHCR visuals. Try to limit the number of different colours in a single graphic. In some cases more colours may be used to ensure clarity, e.g. distinguishing between different categories within the data.

In this guide you will find recommendations on how to use and pair colours for different types of data:

- Categorical: when data is non-numeric, contrasting colours are used for each category.
- Sequential: the same or similar hues are used, and saturation varies for a single metric.
- Diverging: two hues are used to indicate a division, such as positive and negative values.

You will also find recommended colours to be used for UNHCR People of Concern categories and UNHCR geographical regions/bureaux.

Consistent use of these colours contribute to a coherent and consistent look for UNHCR products across all communication channels and platforms. A strong visual identity improves audience recognition and distinguishes UNHCR from other organisations. Therefore, we strongly recommend implementing these guidelines to the extent possible for all visualizations.

Main colours

Blue (primary colour)
CMYK: 99, 50, 0, 0
RGB: 0, 114, 188
HEX: #0072BC

Navy
CMYK: 99, 83, 36, 27
RGB: 24, 55, 95
HEX: #18375F

Green
CMYK: 90, 0, 52, 0
RGB: 0, 179, 152
HEX: #00B398

Grey
CMYK: 0, 0, 0, 60
RGB: 102, 102, 102
HEX: #666666

Red
CMYK: 0, 87, 52, 0
RGB: 239, 74, 96
HEX: #EF4A60

Yellow (accent colour)
CMYK: 3, 1, 100, 0
RGB: 250, 235, 0
HEX: #FAEB00

Colour ramps

General recommendation for colour pairing

The use of green and red together should be avoided in respect to colourblind audience. If pairing both colours cannot be avoided, make sure light vs. dark tones are used to accentuate the difference between them.

Yellow doesn't contrast well on white, it may be paired with blue background.

Colours in the same colour ramp with similar values should not be used for categorical data because they are not visually distinct enough from each other.

When data describes an event with both positive and negative data, we recommend to use blue for positive and red for negative.

When data relates to gender, we should avoid using blue and red pairing, we recommend to use a more neutral colour pairing like blue and navy.

The lightest shades of the colour ramps such as blue 1 and green 1 are recommended primarily for mapping purposes.

Both blue and red can be used for highlighting a particular data point, we recommend to use red for a blue-based chart and blue for a grey-based chart as examples shown below.

Note on different colour values:

Use CMYK colours on coated and uncoated paper for offset printing, such as magazines, brochures, leaflets, full colour ads, etc.

Use RGB colours for computer presentations, digital displays, TV productions, etc.

Use HEX colours online.

Colour ramps

	CMYK	RGB	HEX
Blue 5	100, 74, 23, 7	4, 79, 133	#044F85
Blue 4 (Main blue)	99, 50, 0, 0	0, 114, 188	#0072BC
Blue 3	62, 30, 0, 0	88, 155, 229	#589BE5
Blue 2	39, 17, 0, 0	142, 190, 255	#8EBEFF
Blue 1	11, 4, 0, 0	220, 233, 255	#DCE9FF

	CMYK	RGB	HEX
Navy 5 (Main navy)	99, 83, 36, 27	24, 55, 95	#18375F
Navy 4	76, 60, 27, 7	80, 100, 137	#506489
Navy 3	51, 36, 12, 0	131, 149, 185	#8395B9
Navy 2	26, 15, 0, 0	184, 201, 238	#B8C9EE
Navy 1	10, 5, 0, 0	224, 233, 254	#E0E9FE

	CMYK	RGB	HEX
Green 5	87, 30, 65, 13	2, 123, 104	#027B68
Green 4 (Main green)	90, 0, 52, 0	0, 179, 152	#00B398
Green 3	61, 0, 40, 0	73, 207, 180	#49CFB4
Green 2	48, 0, 30, 0	106, 232, 204	#6AE8CC
Green 1	16, 0, 9, 0	207, 255, 242	#CFFFF2

	CMYK	RGB	HEX
Grey 5	0, 0, 0, 80	51, 51, 51	#333333
Grey 4 (Main grey)	0, 0, 0, 60	102, 102, 102	#666666
Grey 3	0, 0, 0, 40	153, 153, 153	#999999
Grey 2	0, 0, 0, 20	204, 204, 204	#CCCCCC
Grey 1	0, 0, 0, 10	230, 230, 230	#E6E6E6

	CMYK	RGB	HEX
Red 5	20, 100, 79, 11	180, 28, 55	#B41C37
Red 4 (Main red)	0, 87, 52, 0	239, 74, 96	#EF4A60
Red 3	0, 61, 27, 0	255, 132, 144	#FF8490
Red 2	0, 32, 12, 0	225, 188, 193	#FFBCC1
Red 1	0, 11, 4, 0	255, 231, 232	#FFE7E8

	CMYK	RGB	HEX
Yellow 5	29, 33, 100, 2	187, 157, 33	#BB9D21
Yellow 4	15, 13, 100, 0	225, 204, 13	#E1CC0D
Yellow 3 (Main yellow)	3, 1, 100, 0	250, 235, 0	#FAEB00
Yellow 2	2, 0, 60, 0	255, 244, 131	#FFF483
Yellow 1	1, 0, 25, 0	255, 249, 203	#FFF9CB

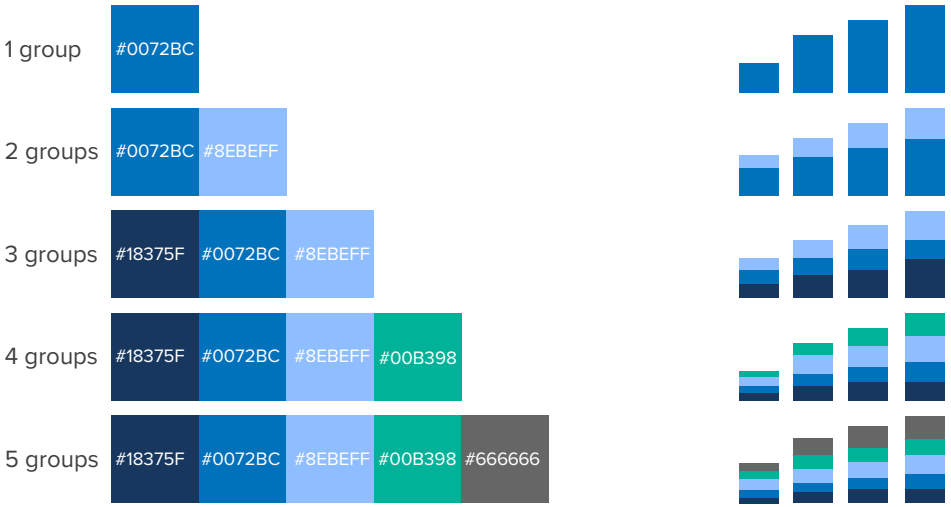
Colour combination

Categorical

A categorical palette is used when the variable is non-numeric. **Categorical variables are those that take on distinct labels without inherent ordering.** Examples include country or region, activity, and gender. Each possible value of the variable is assigned with a contrasting colour from a categorical palette.

As part of dataviz best practices, **it is not recommended to have more than five groups in one single chart**. If there are more than five groups, we suggest consolidating the categories or breaking up the chart into two or more.

Categorical palette



Colour combination

Categorical

In UNHCR, there are two standing exceptions to the recommendation above: types of People of Concern (PoC) and geographical regions/bureaux as both include seven categories.

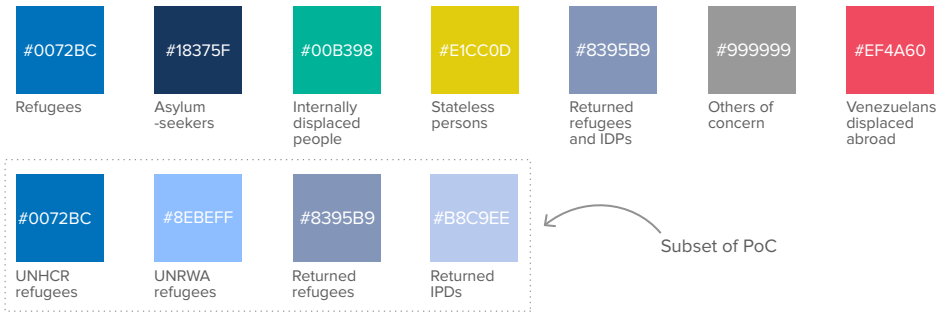
In order to be consistent, every category has been assigned with a specific colour.

- **People of Concern:** we recommend to apply the colours as shown on the People of Concern palette
- **Region/Bureau:** we recommend to apply the colours as shown on the Region/Bureau palette

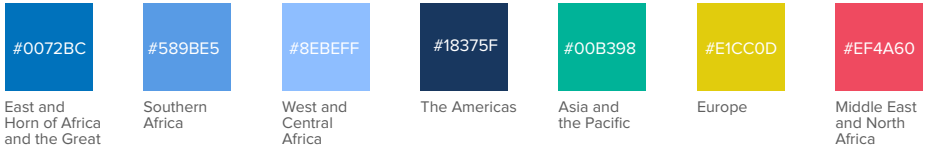
The legend of chart should follow the same order as the colour palette if there's no specific data ordering or sorting requirement.

These colour palettes are for products in which all or most PoC's and/or geographical regions/bureaux are displayed in a single graphic. If there is a report/publication only about IDPs, for example, the colour palette would use the main UNHCR colour(s), i.e. Blue.

People of concern palette



Region/Bureau palette



Colour combination

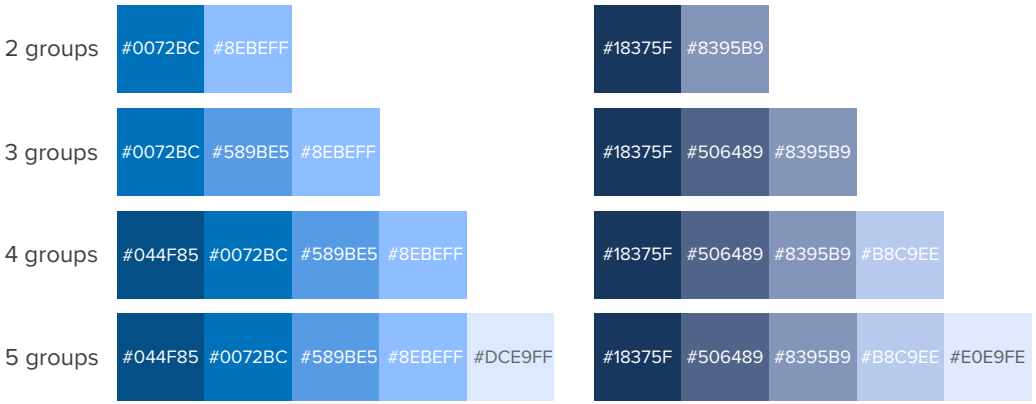
Sequential

A sequential palette is used when the variable is numeric or has inherently ordered values. It is a gradation of colours that go from light to dark or the other way round. Sequential colours have numeric meaning. They're great for visualizing numbers that go from low to high, like population, income, temperature, or age.

More shades of colour can be added as shown when the number of group increases.

Note: green and red colours should follow the same pattern as the blue. Please prioritize using the blue palette whenever possible.

Sequential palette



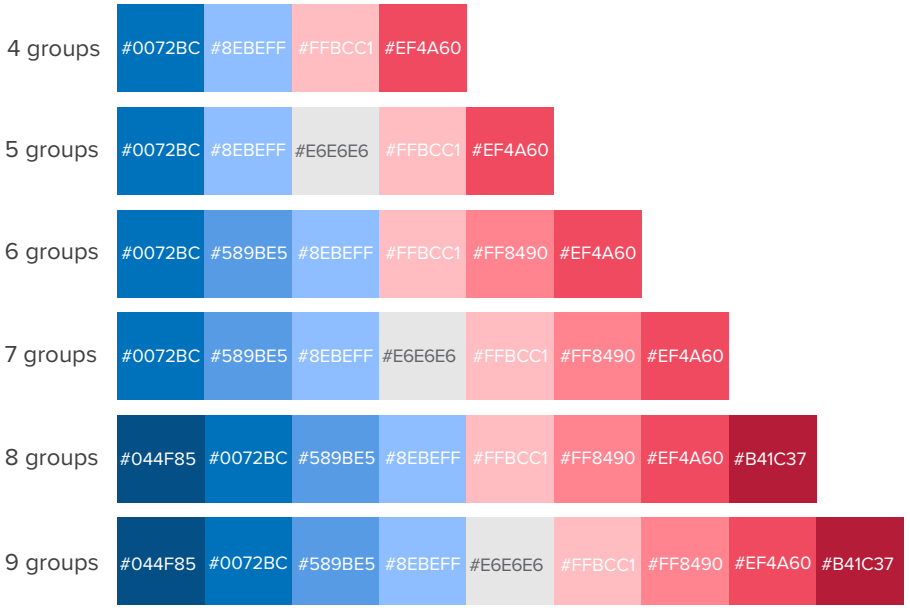
Diverging

A diverging palette combines two sequential palettes, where the common endpoint is located in the middle and the shades of each hue progress from lighter to darker towards the extremities. Diverging colours also have numeric meaning. It's often used to visualize negative and positive values with a baseline in the middle, like economic growth.

More shades of colour can be added on both side of palette as shown when the number of group increases.

Note: sequential and diverging palettes can be associated with data values in two different ways: either as a discrete set of colours, each one associated with a numeric range, or as a continuous function between numeric value and colour.

Diverging palette



Choose right chart type

Chart type

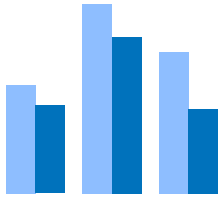
Comparison

Charts that show a comparison between two or more variables within the data set. These can be relative or absolute.

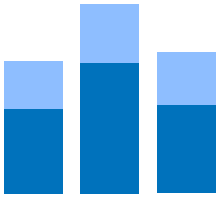

Bar chart


Column chart


Grouped bar chart


Grouped column chart

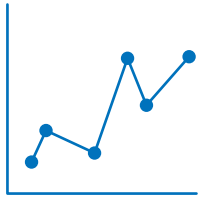

Stacked bar chart

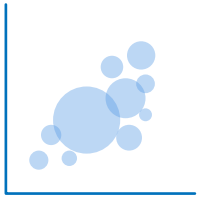

Stacked column chart

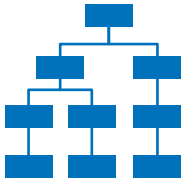
Correlation

Charts that show how two or more variables relate to each other.

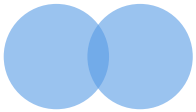

Scatterplot


Connected scatterplot


Bubble chart


Tree diagram


Heatmap

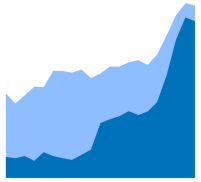

Venn diagram

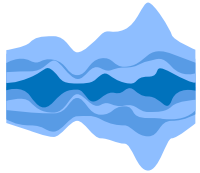
Change over time

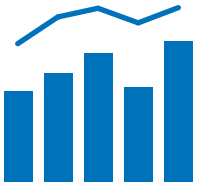
Charts that show data over a certain period of time as a way to find trends or highlight changes.

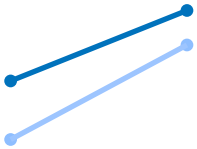

Line chart


Area chart


Stacked area chart

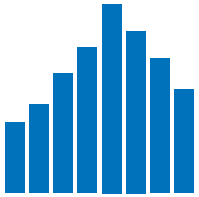

Stream graph


Line column chart

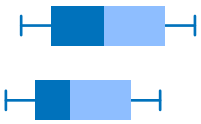

Slope chart

Distribution

Charts that show how individual data points are grouped or spread out within the data set. It's a great method to find the frequency of events.


Histogram


Population pyramid


Boxplot

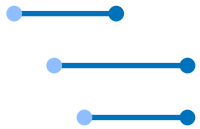
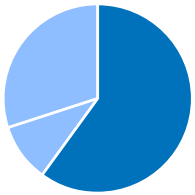

Dot plot

Chart type

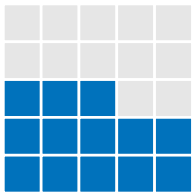
Part-to-a-whole

Charts that show how a single entity can be divided into its individual parts. If your purpose is to show the size of the different parts, comparison-type charts can be a better option.

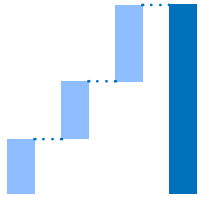

Pie chart


Donut chart


100% stacked chart

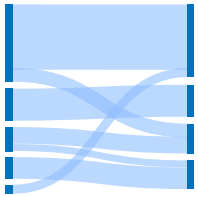

Grid plot

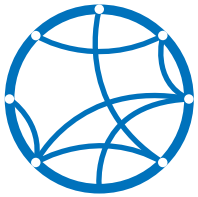

Treemap


Waterfall

Flow

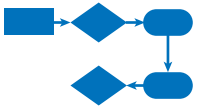
Charts that show movement between two or more states or conditions. It can be logical sequences or geographical locations.


Sankey diagram


Chord diagram

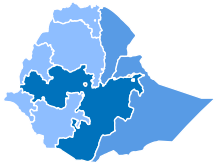

Flow map

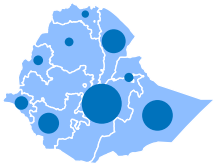

Arc diagram


Flow chart

Geospatial

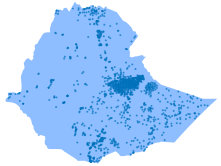
Spatial charts show data as locations or geographical patterns over geographical regions.

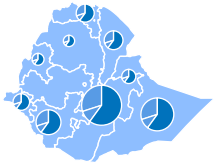

Choropleth map


Bubble map


Flow map


Icon map


Dot density map

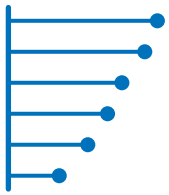

Pie chart map

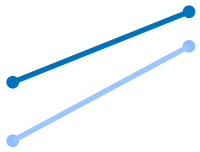
Ranking

Charts that show not only the magnitude but also relative ranking of variables.


Ordered bar chart


Ordered column chart

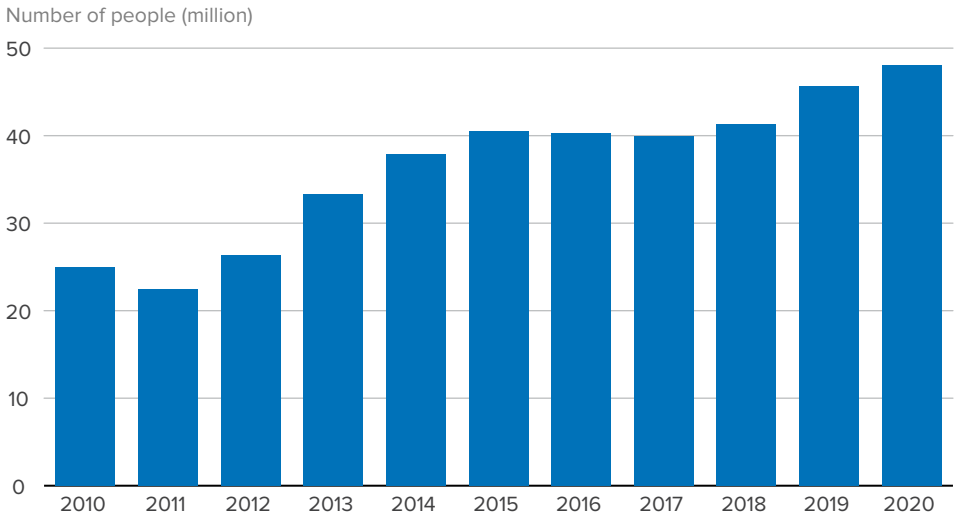

Lollipop chart


Slope chart

Annex

Column chart

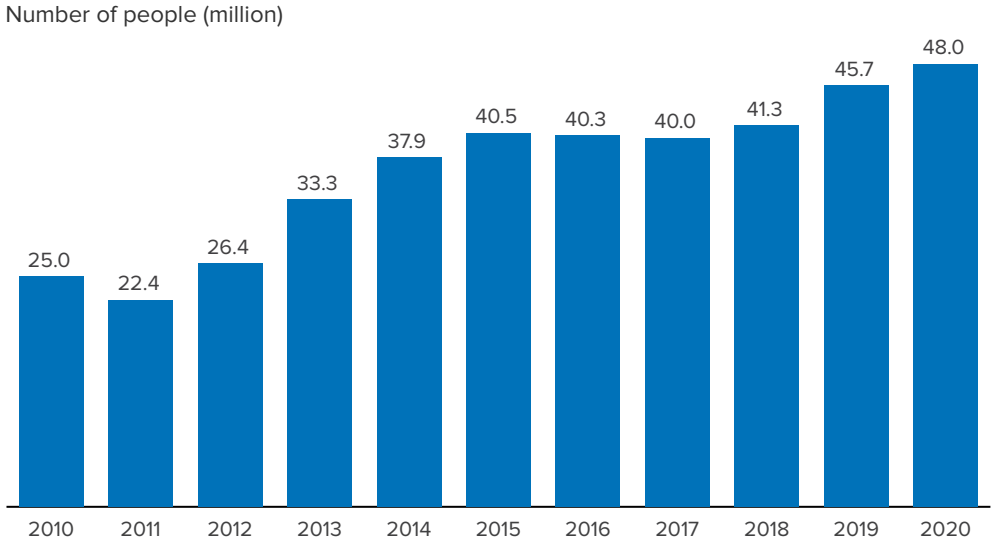
Global IDP displacement | 2010-2020



Source: UNHCR Refugee Data Finder

Column chart with data label

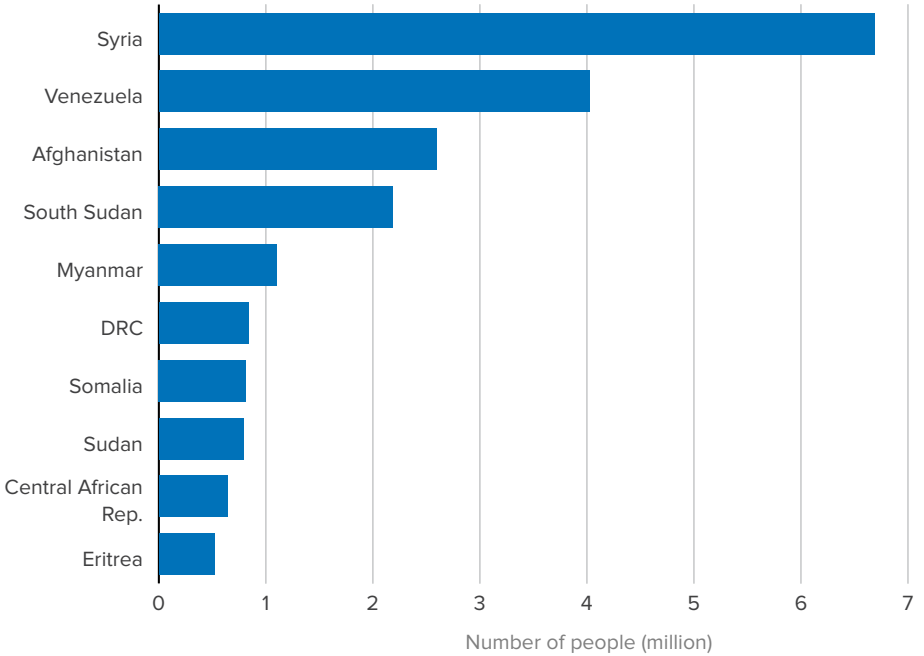
Global IDP displacement | 2010-2020



Source: UNHCR Refugee Data Finder

Bar chart

People displaced across borders by country of origin | 2020

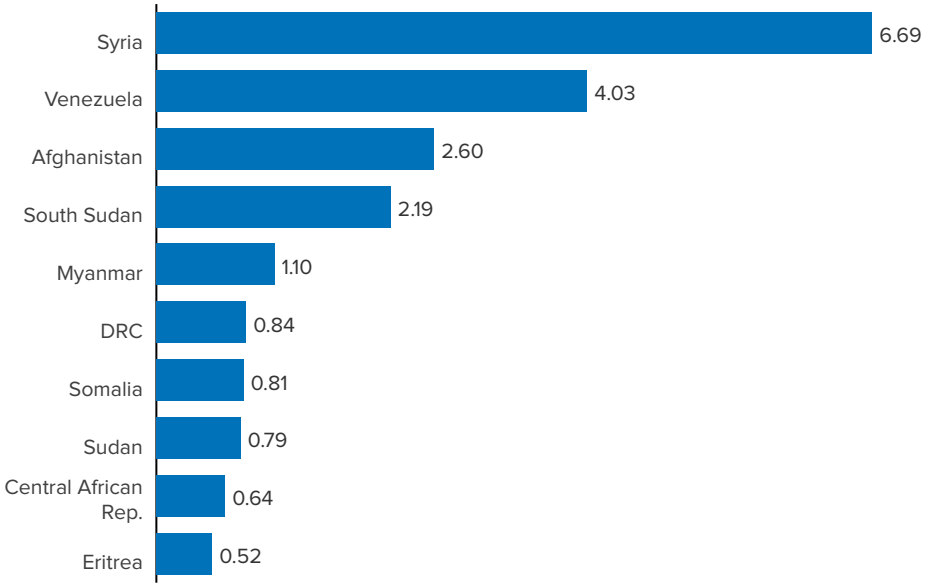


Source: UNHCR Refugee Data Finder

Bar chart with data label

People displaced across borders by country of origin | 2020

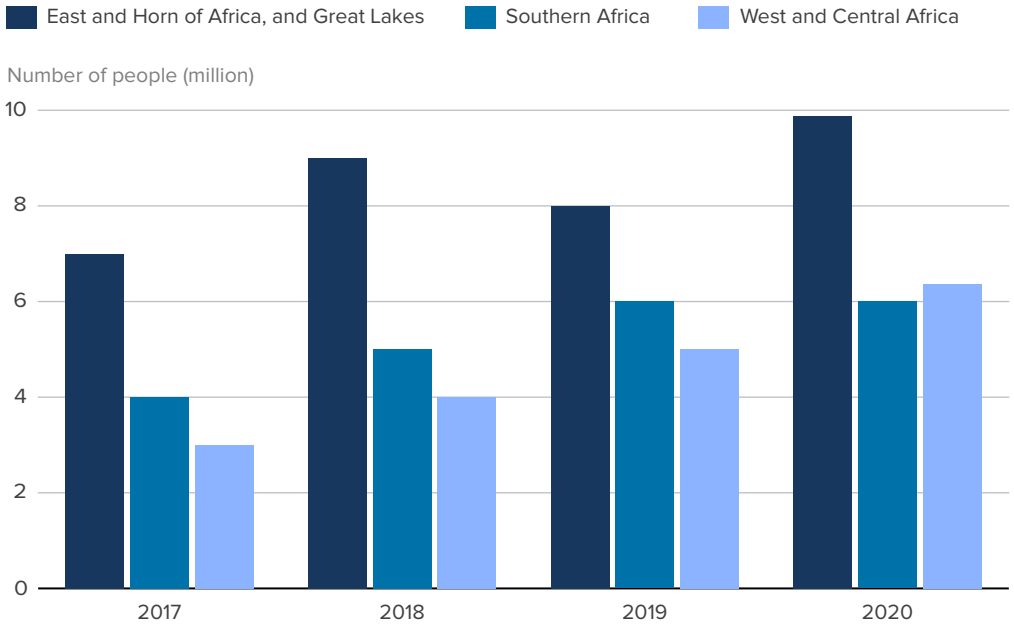
Number of people (million)



Source: UNHCR Refugee Data Finder

Grouped column chart

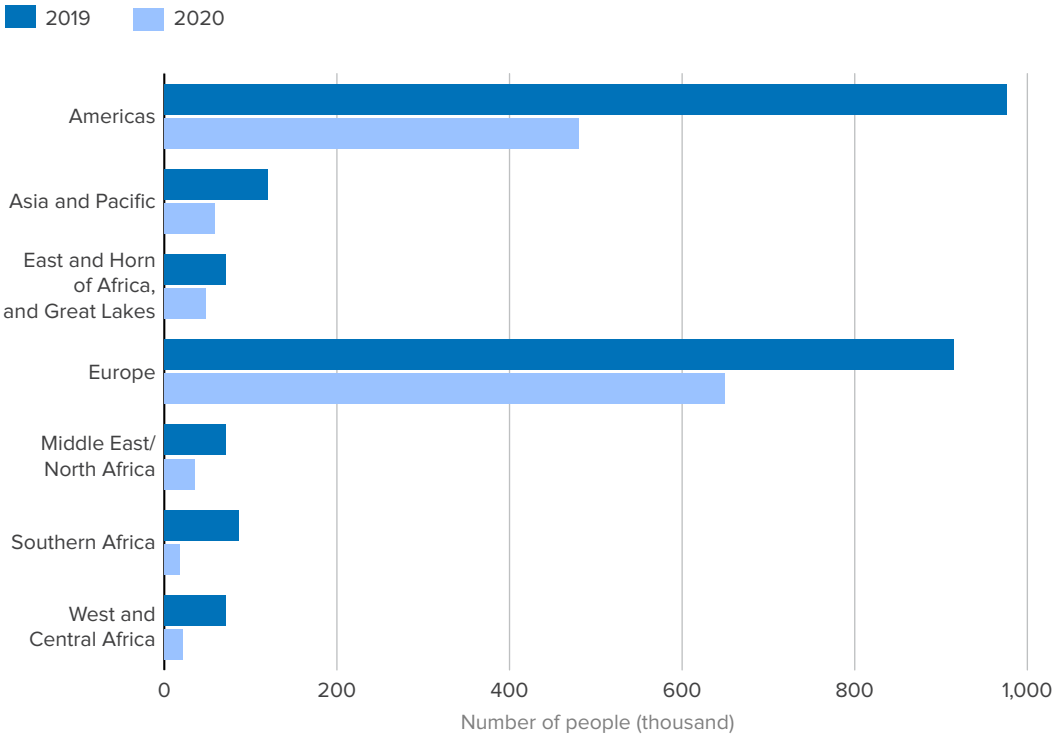
IDPs of concern to UNHCR in Africa region | 2017-2020



Source: UNHCR Refugee Data Finder

Grouped bar chart

Individual asylum applications registered by region | 2019-2020

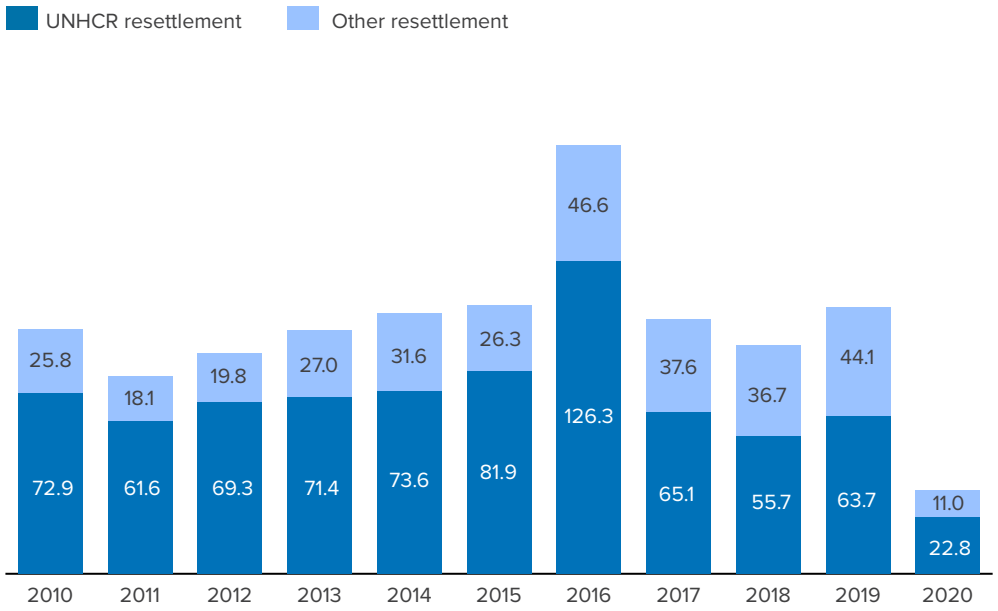


Source: UNHCR Refugee Data Finder

Stacked column chart

Resettlement by UNHCR and others | 2010-2020

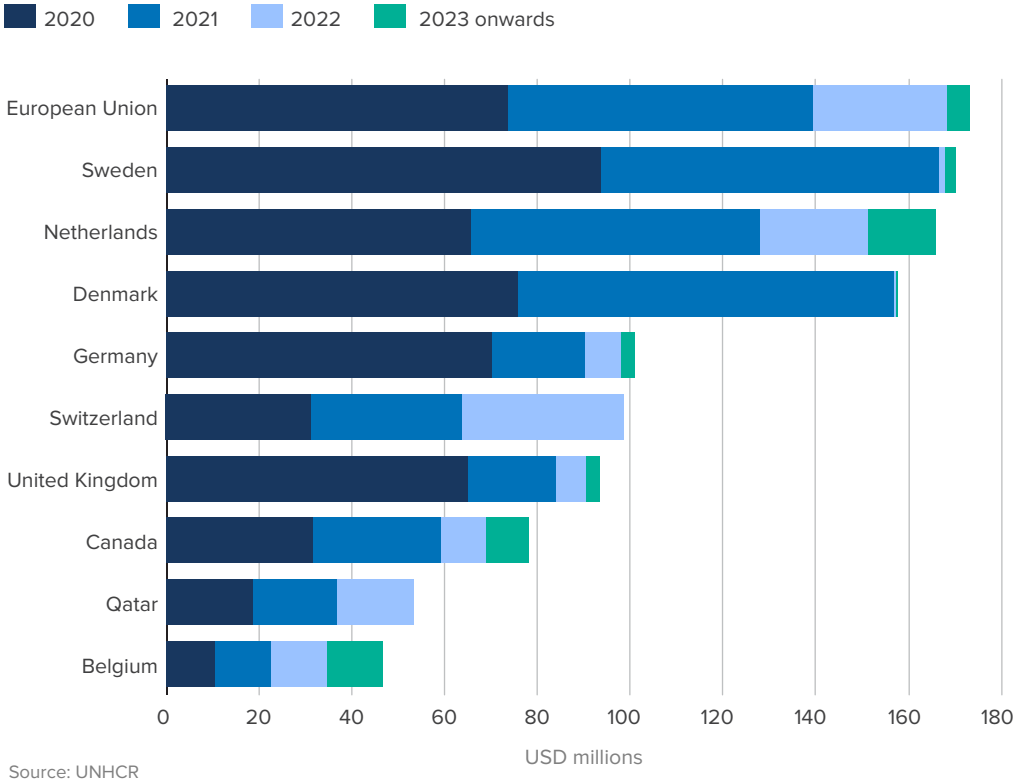
Number of people (thousand)



Source: UNHCR Refugee Data Finder

Stacked bar chart

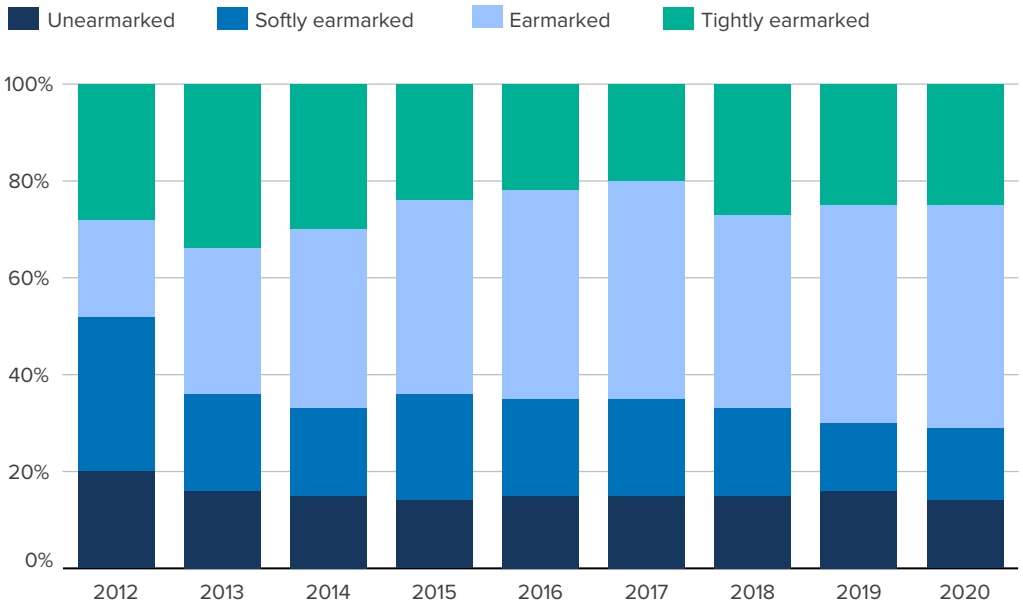
Top ten donors of multi-year contributions of UNHCR



Source: UNHCR

100% stacked column chart

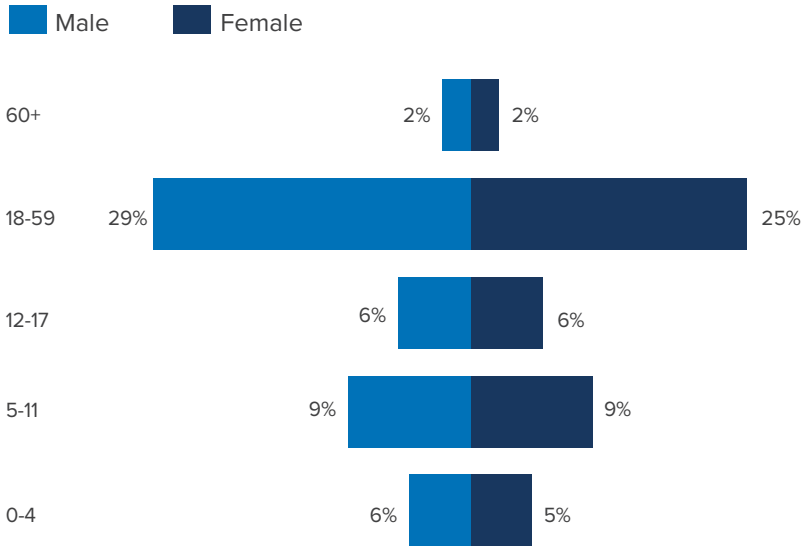
Levels of earmarking | 2012-2020



Source: UNHCR

Population pyramid

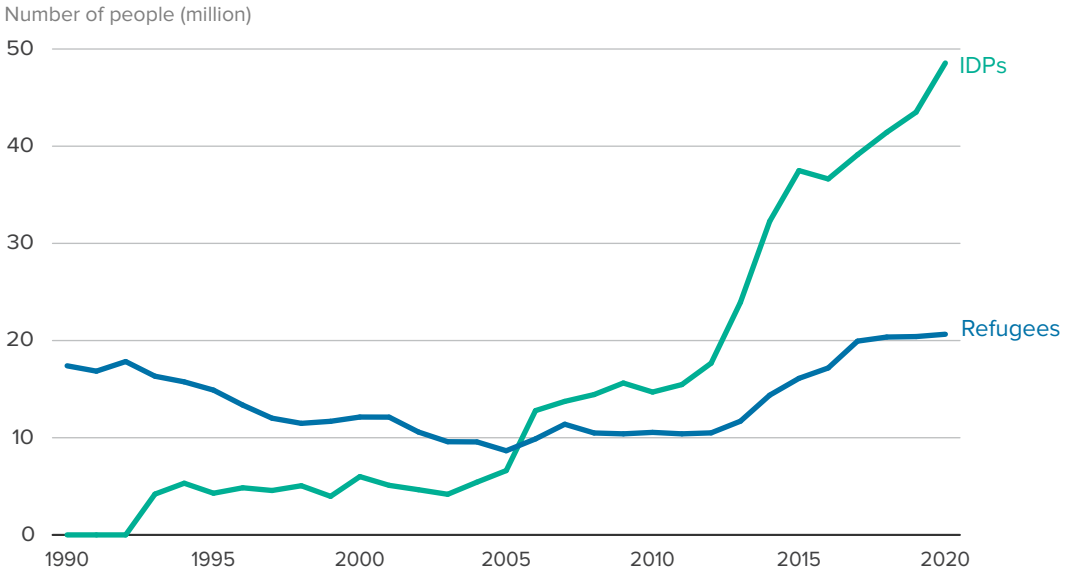
Estimated demographic composition of the global population displaced across borders | 2020



Note: figures do not add up to 100 per cent due to rounding
Source: UNHCR Refugee Data Finder

Line chart

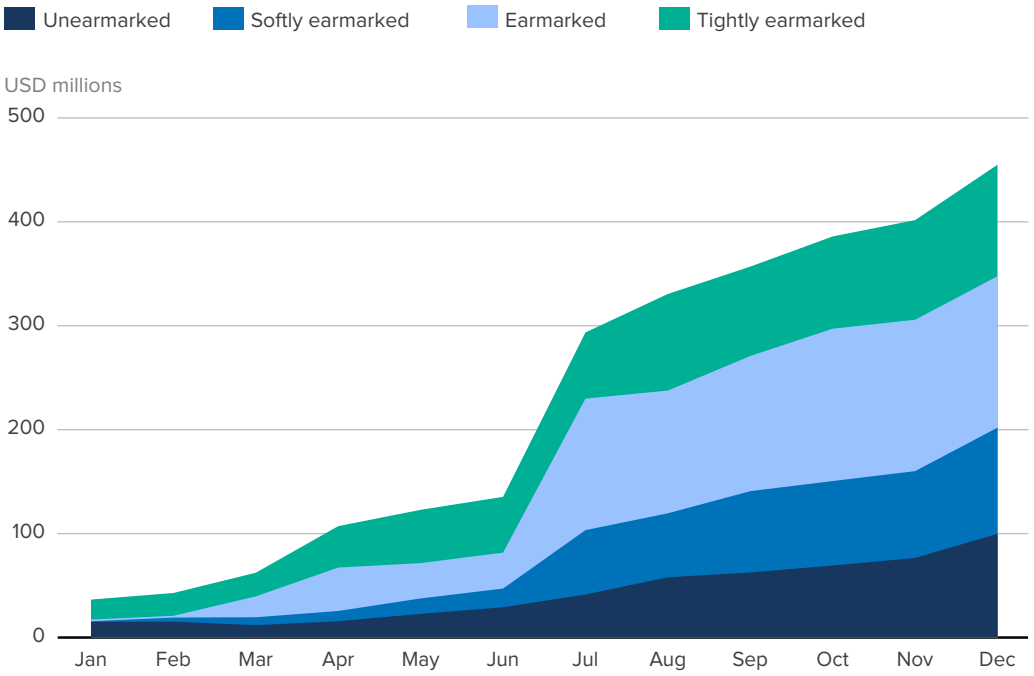
Number of refugees and IDPs of concern to UNHCR | 1990-2020



Source: UNHCR Refugee Data Finder

Area Chart

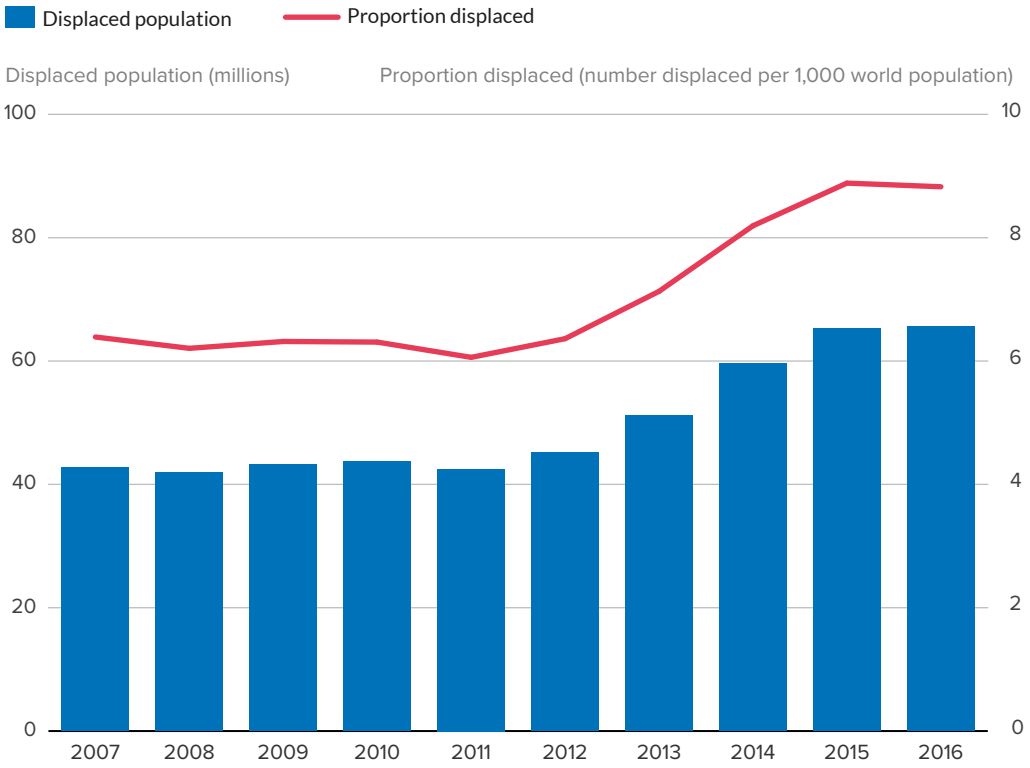
Monthly evolution of funding in West and Central Africa region | 2020



Source: UNHCR

Combined column and line chart

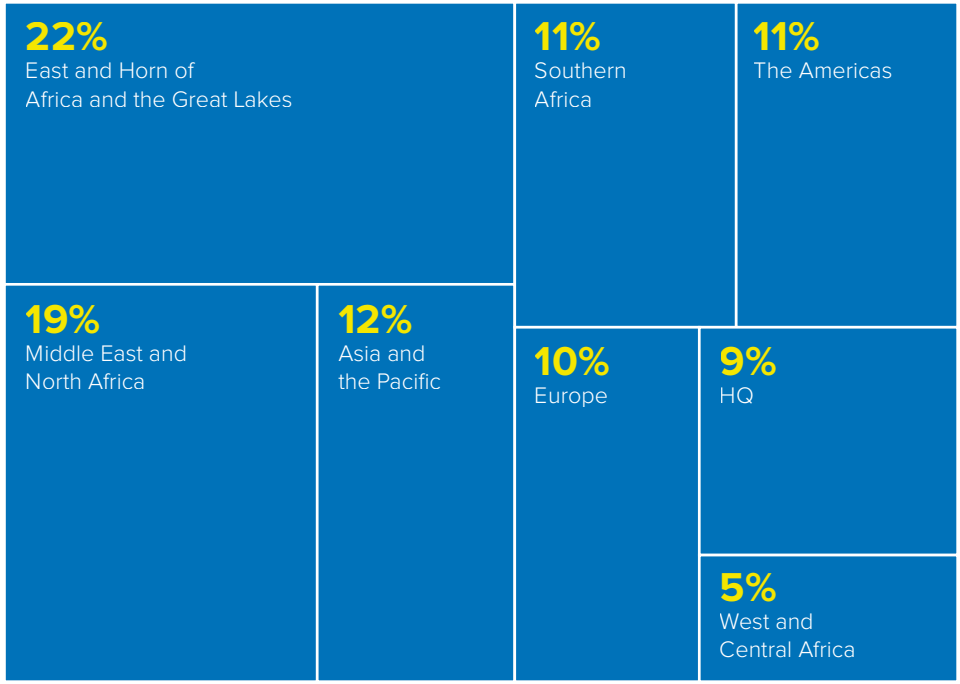
Trend of global displacement | 2007 - 2016



Source: UNHCR Refugee Data Finder

Treemap

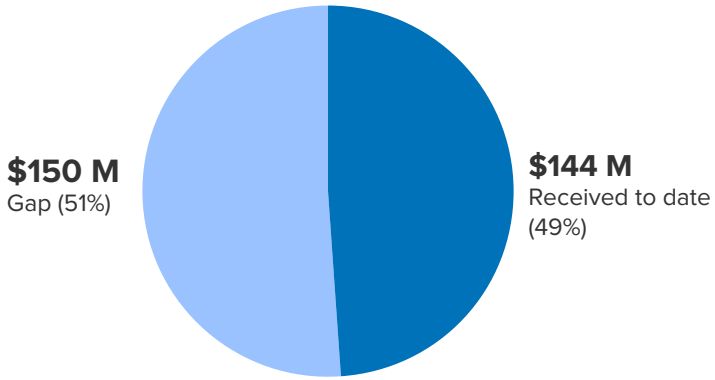
UNHCR global workforce by region | 2020



Note: figures do not add up to 100 per cent due to rounding
Source: UNHCR

Pie chart

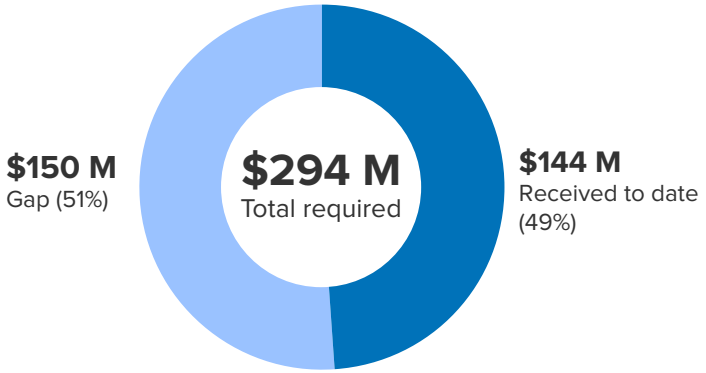
UNHCR Funding (as of August 2021)



Source: UNHCR

Donut chart

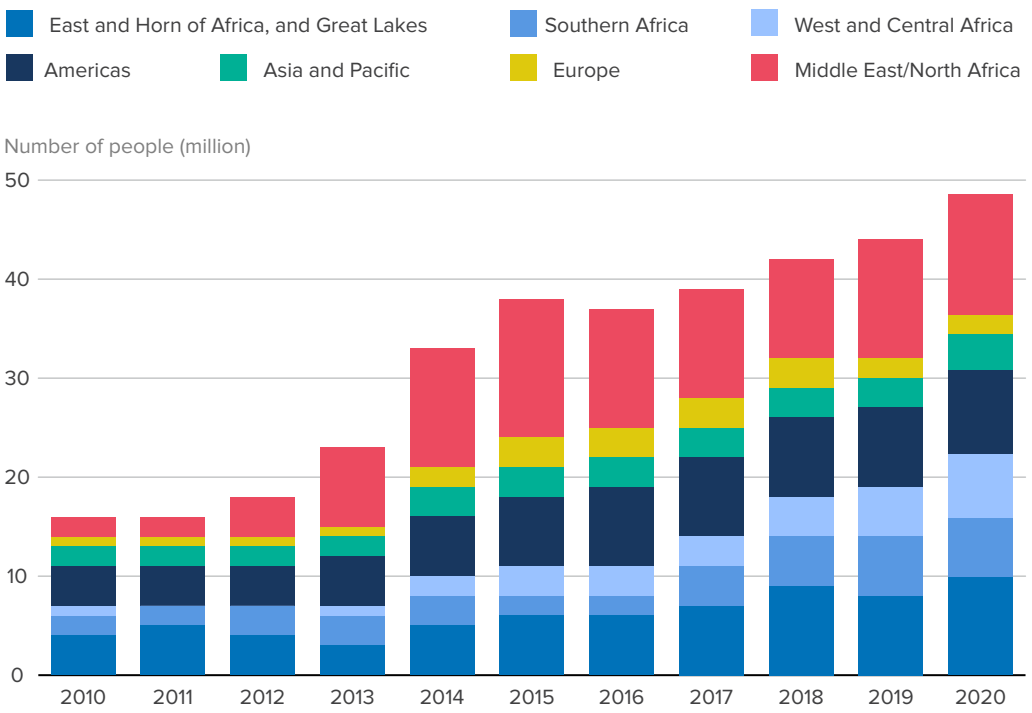
UNHCR Funding (as of August 2021)



Source: UNHCR

Stacked column chart using UNHCR region/bureau colour palette

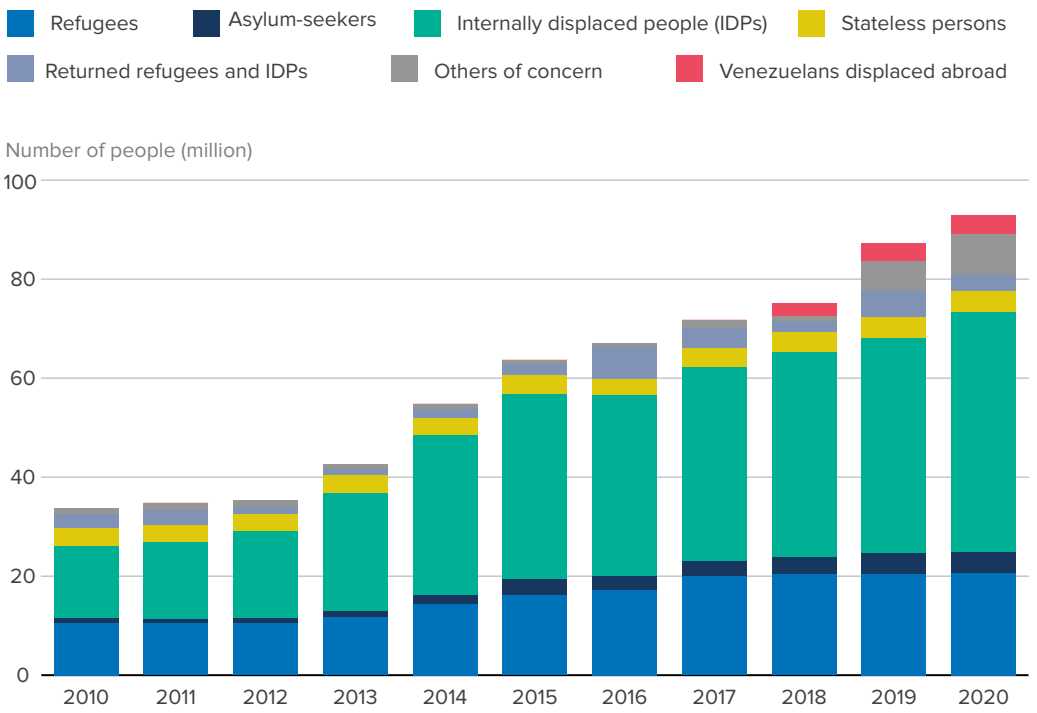
IDPs of concern to UNHCR by region | 2010-2020



Source: UNHCR Refugee Data Finder

Stacked column chart using UNHCR PoCs colour palette

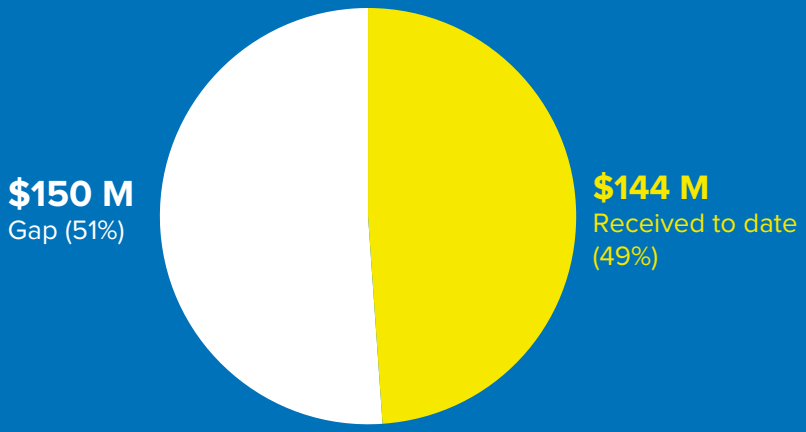
People of concern to UNHCR | 2010-2020



Source: UNHCR Refugee Data Finder

Pie chart with blue background

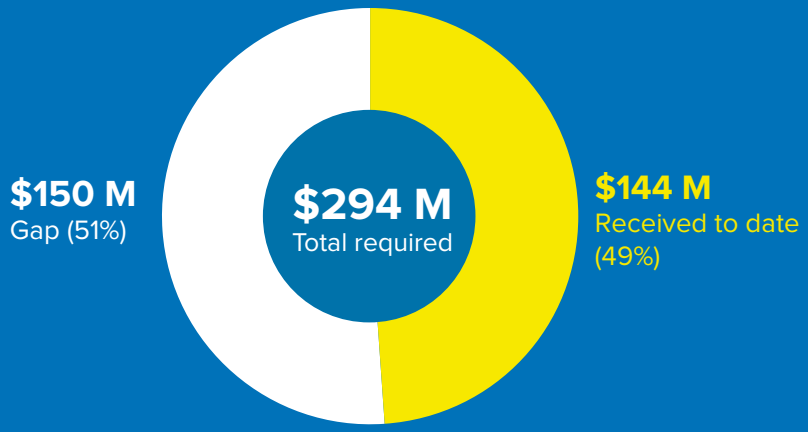
UNHCR Funding (as of August 2021)



Source: UNHCR

Donut chart with blue background

UNHCR Funding (as of August 2021)



Source: UNHCR


UNHCR
The UN Refugee Agency