United Nations | DESA Statistics Division

UKaid from the British people

VISUALIZING SDG & COVID-19 DATA IN DIFFERENT REPORTING AND DISSEMINATION MATERIALS

Ms. Heather Page & Ms. Dewi Glanville

Workshop on SDG & COVID-19 Data Visualization Toolkit: UNSD-FCDO Project on SDGs Monitoring

17 & 18 August 2021 | Virtual

SUSTAINABLE DEVELOPMENT GOALS

KEY CONSIDERATIONS FOR DEVELOPING DATA VISUALIZATIONS

Overall Goal: Provide audiences with accurate, insightful data and information in a way they can understand and connect with

In order to do this, as statisticians and data analysts, we need to:

- ✓ Be clear on the who, what, why of the data
- ✓ Identify and understand the target audience and their statistical literacy
- ✓ Understand, develop and articulate the key messages from the data
- ✓ Identify visualization objectives, technical/human resource constraints, style guidelines, preferred visualization tool

KEY CONSIDERATIONS FOR REPORTING ON SDGS & COVID-19

SDGs

SDG Reporting:

- By Goal
- By cross-cutting theme: LNOB dimensions, etc.
- Highlighting progress, trends and challenges (from baseline)
- Projections, forecasts/ nowcasts to 2030

COVID-19

COVID-19 Reporting:

- Statistics on cases, mortality, hospitalizations, vaccinations, etc.
- Highlighting areas of concern, recovery, etc. (geospatial)
- Socio-economic effects of COVID-19 and on SDG progress

UNSD SUSTAINABLE DEVELOPMENT GOALS REPORTS (INCLUDING OVERVIEW INFOGRAPHICS)

PROCESS

1. **Gather Data**
2. **Develop key messages, short summaries and headlines**
3. **Sketch/Design**
4. **Feedback**
5. **Review and revise**

- **Collaborative process with over 50 UN agencies to develop the global picture of progress and challenges to implement the SDGs**
- **Summary key messages are included in the overview infographics which cover all 17 Goals and LNOB-- this section includes icons, graphs and concise key messages to convey the overall trends in each Goal**
- **Each Goal includes a short summary of a selection of indicators accompanied by graphs/charts, introduction and photo**
- **Every sentence is checked for accuracy against a statistical annex and global indicator database (231 indicators, 561 data series)**

KEY CONSIDERATIONS FOR DEVELOPING INFOGRAPHICS

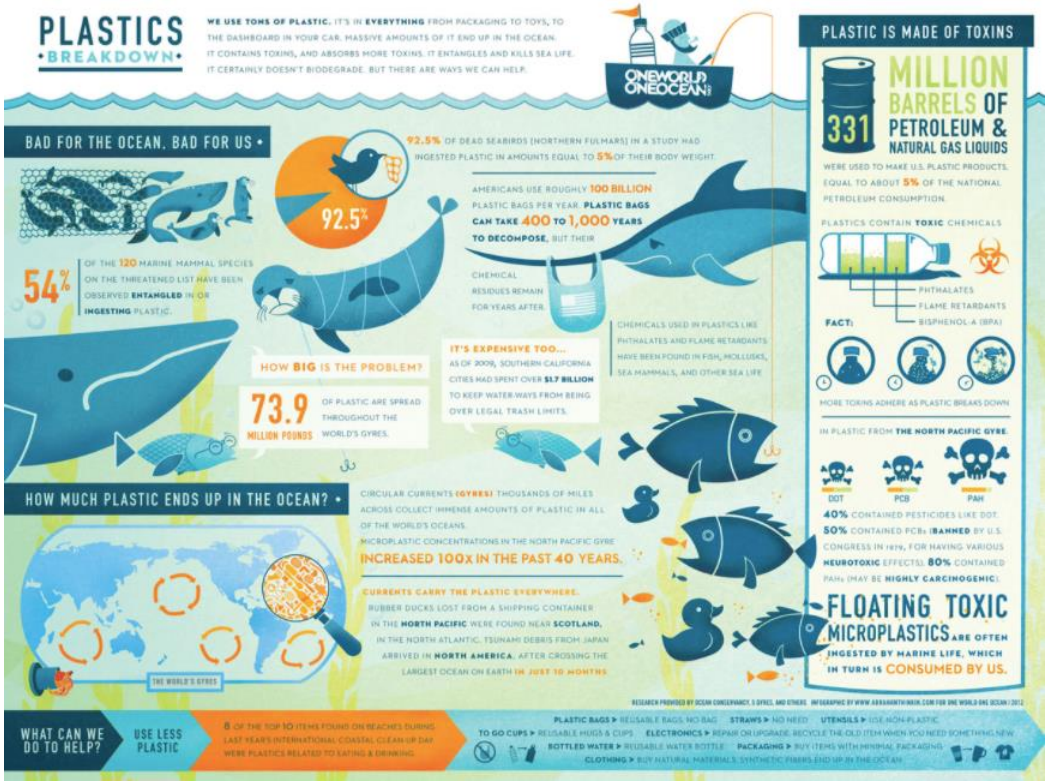
Why infographics are helpful:

- Makes data easy to digest
- Helps identify patterns
- Helps narrate a broader story
- Makes data more memorable
- Easier to focus on interesting trends
- More reader-friendly than regular charts/pies

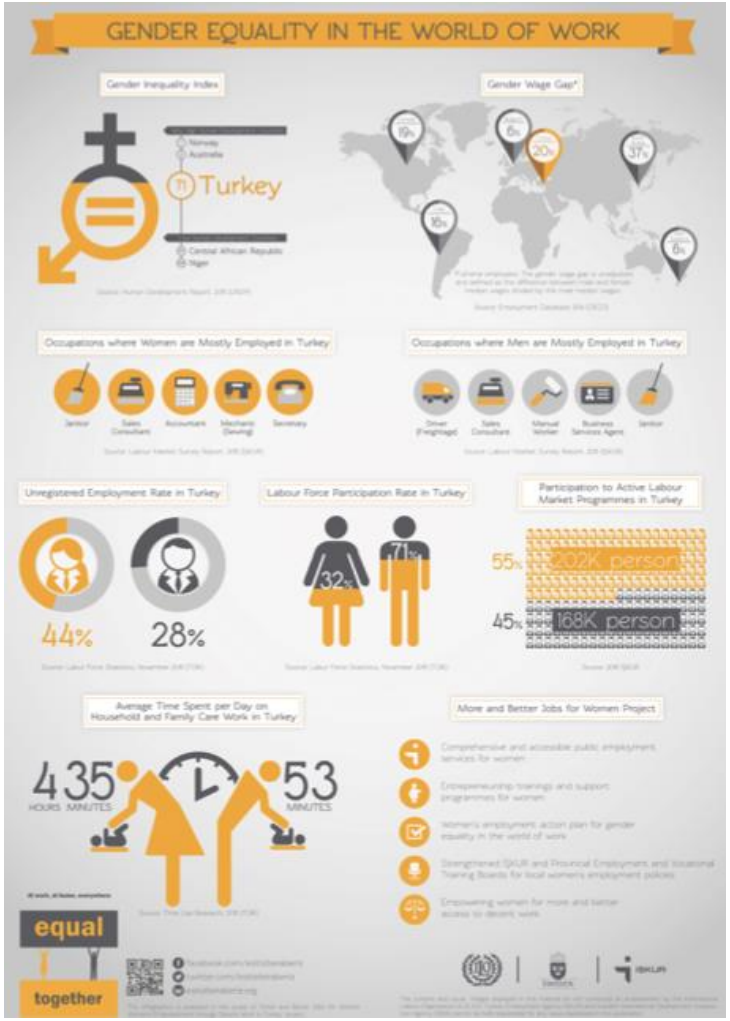
Best practices:

- Know target audience
- Keep it simple and easy to review
- Focused: one topic a time
- Focus on the flow: streamlined
- Create your short key messages with data
- Work with graphic designers or easy-to-use tools and programs
- Choose appropriate icons
- Balance visual and written information: collaborate with others and look for data visualization inspiration
- Review and revise

SOME GENERAL INFOGRAPHICS



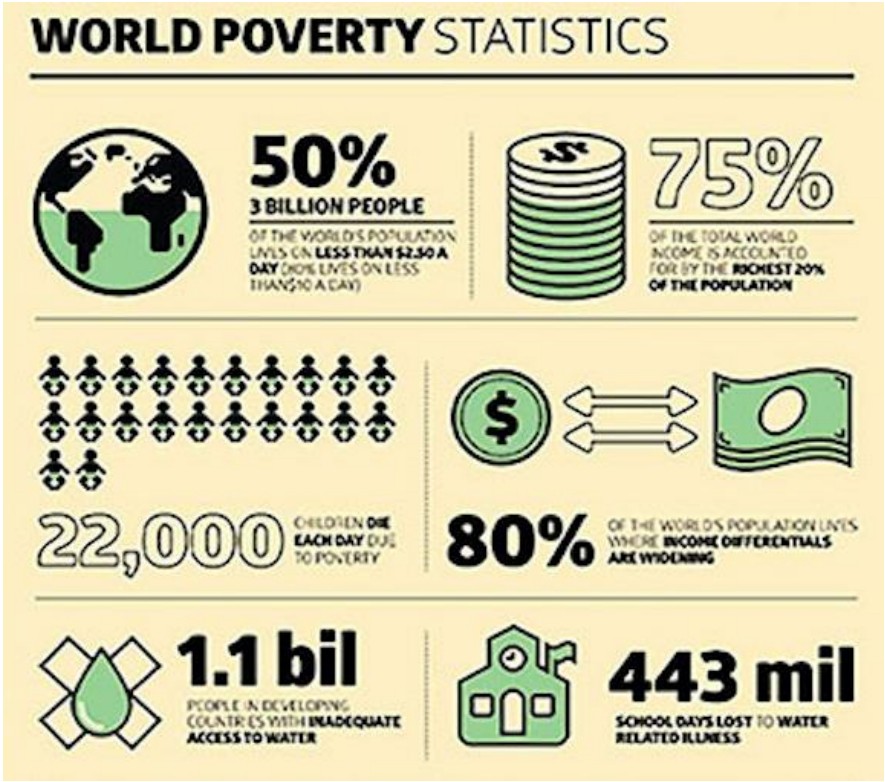
Source: [One World One Ocean "Plastics Breakdown"]



Source: [ILO "Gender Equality in the World of Work"]

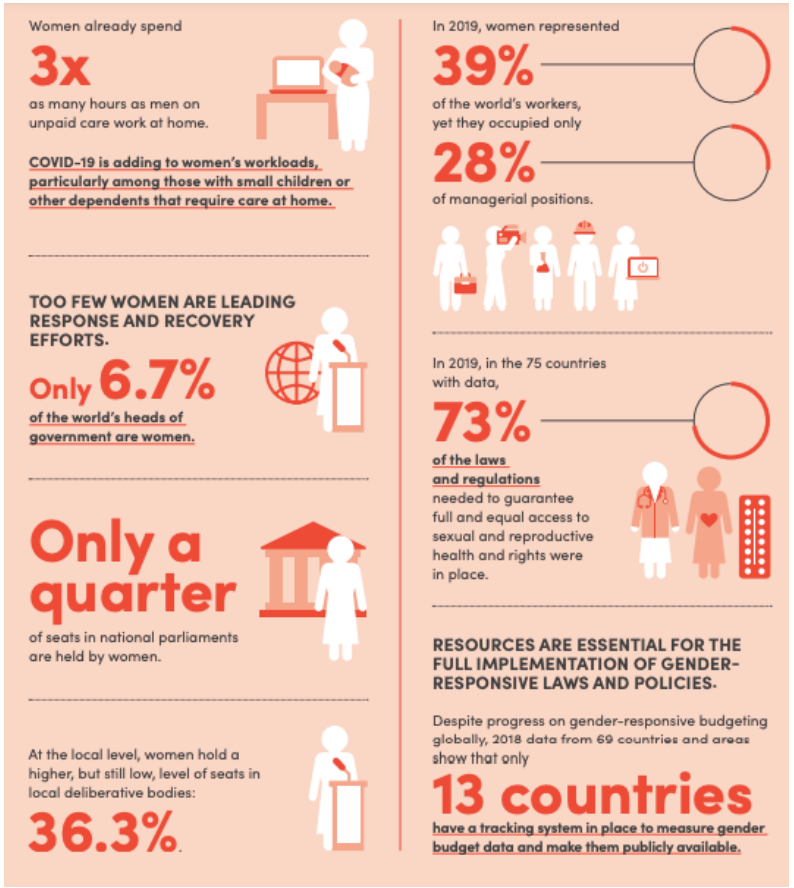
SOME GENERAL INFOGRAPHICS

Source: [New Zealand as a village of 100 people: 2018 Census]

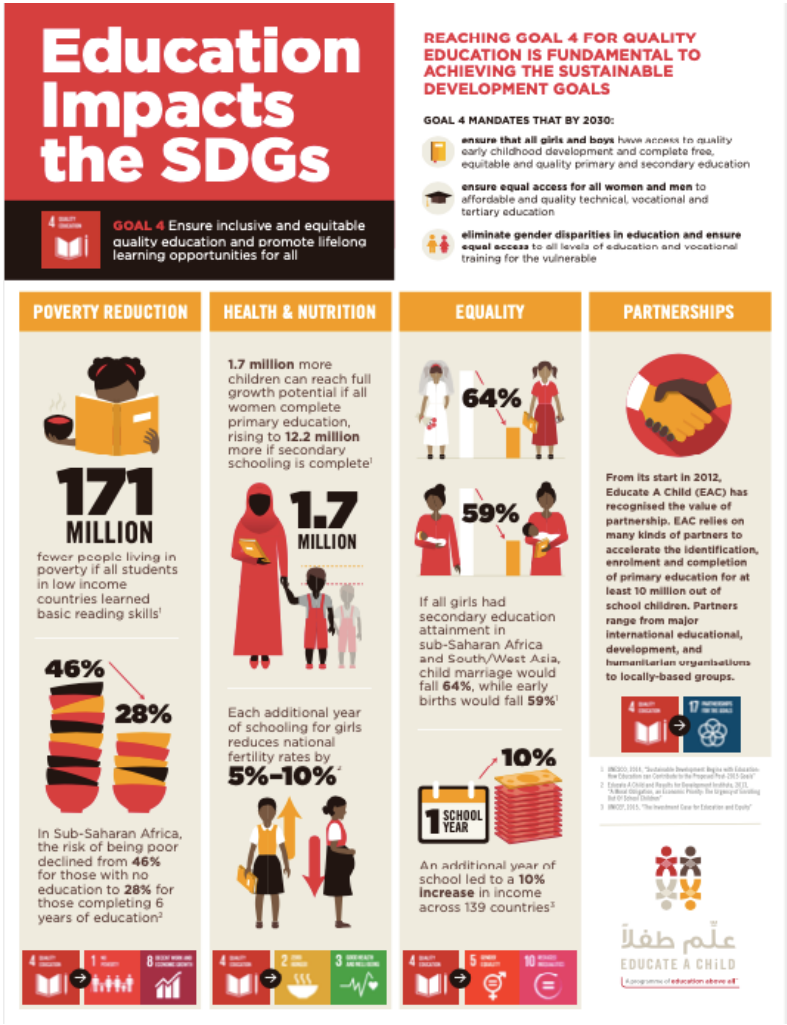


Source: [Infographic.ly "World Poverty Statistics"]

SDG INFOGRAPHICS

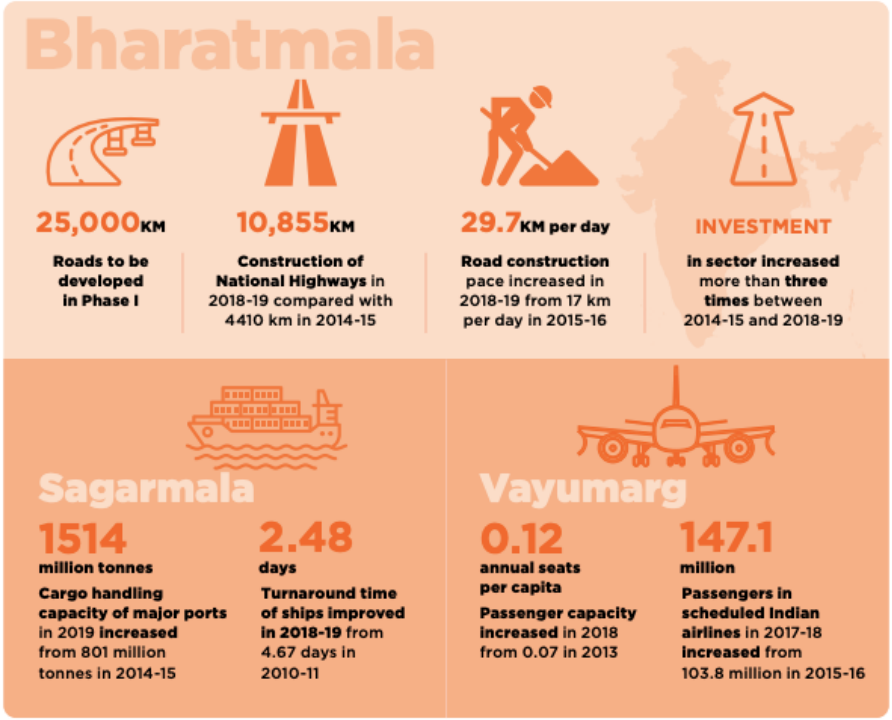


Source: [The Gender Snapshot 2020]



Source: [EEA Foundation "Education Impacts the SDGs"]

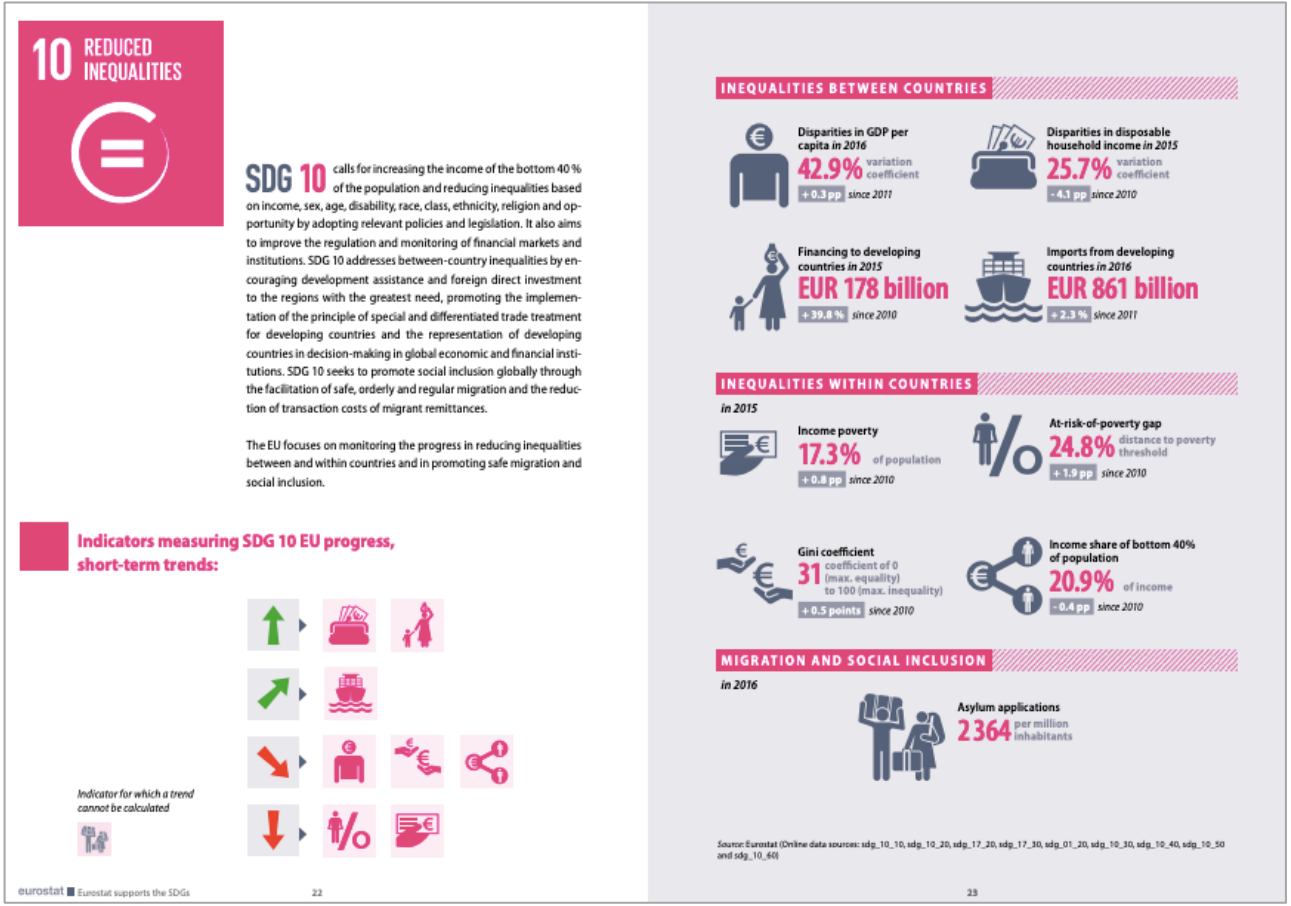
SDG INFOGRAPHICS IN REPORTS



Source: [India VNR 2020: Decade of Action Taking SDGs from Global to Local]

Source: [The Sustainable Development Goals Report 2021]

SDG REPORTS



Source: Sustainable Development in the European Union

SDG REPORTS

Ensure sustainable consumption and production patterns

A growing global population combined with the unsustainable use of natural resources is having a devastating impact on our planet – propelling climate change, destroying nature and raising pollution levels. About 14 per cent of the world's food is lost along the supply chain prior to the retail level. Around the world, 1 million plastic drinking bottles are purchased every minute, and 5 trillion single-use plastic bags are thrown away each year. The global material footprint increased by 70 per cent between 2000 and 2017.

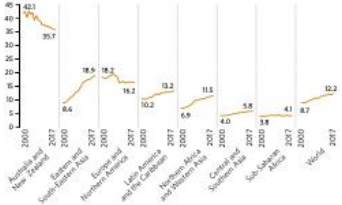
Today, we have a historic window of opportunity to design a transformative COVID-19 recovery strategy to build sustainable and resilient economies and societies. It is time to fully embrace the decoupling of economic growth from environmental degradation, a reduction in carbon emissions, improvements in resource efficiency, and the promotion of sustainable lifestyles.

An employee dismantles electronic equipment at a facility established in conjunction with Rwanda's national e-waste management and recycling strategy. The construction of the facility and implementation of the strategy was made possible through an investment by the Rwanda Green Fund.

The rapidly growing rate of natural resource consumption is unsustainable

Globally, domestic material consumption per capita, the total amount of materials directly used by an economy to meet its consumption needs, rose by more than 40 per cent from 2000 to 2017 – from 8.7 to 12.2 metric tons. All regions except Europe and Northern America and Australia and New Zealand experienced significant increases over the past two decades. Rising domestic material consumption in developing regions is mainly due to industrialization, including the outsourcing of material-intensive production from developed regions. Natural resource use and related benefits, along with environmental impacts, are unevenly distributed across countries and regions. A path for sustainable consumption and production requires circular economy approaches, designed to reduce or eliminate waste and pollution, keep products and materials in use, and regenerate natural systems.

Domestic material consumption per capita, 2000 to 2017 (metric tons per capita)



Progress to promote sustainable production and consumption is uneven

Shifting to sustainable consumption and production patterns is a prerequisite to addressing global crises, including climate change, biodiversity loss and pollution, and is central to achieving sustainable development. There is a positive trend in the development of national instruments and strategies aimed at supporting this shift. By 2020, 83 countries and the European Union reported a total of 700 policies and implementation activities under the 10-Year Framework of Programmes on Sustainable Consumption and Production. However, only 50 policies and implementation activities were reported in sub-Saharan Africa, compared with 374 in Europe and Northern America.

As of December 2020, 40 countries had reported on sustainable public procurement policies or action plans (or equivalent legal dispositions), which encourage the procurement of environmentally sound, energy-efficient products, and promote more socially responsible purchasing practices and sustainable supply chains.

Countries reporting on national action plans or policies on sustainable consumption and production, 2017–2019 reporting cycle and 2020 reporting cycle

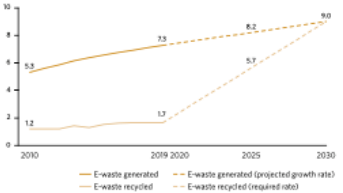
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Electronic waste continues to proliferate and is not being disposed of in a responsible way

In 2019, the world generated 53.6 million metric tons of electronic and electrical equipment waste (e-waste), an increase of more than 20 per cent since 2014. Each person generated about 7.3 kilograms of e-waste in 2019, of which only 1.7 kilograms was documented to have been managed in an environmentally sustainable way. Improper disposal of e-waste causes poisonous chemicals to be released into the soil and water, putting environmental and human health at risk. It results in a significant loss of scarce and valuable raw materials, such as gold, platinum, cobalt and rare earth elements. As much as 7 per cent of the world's gold may currently be contained in e-waste.

E-waste generation is expected to grow by 0.16 kilograms per capita annually, reaching 9.0 kilograms per capita in 2030 (or 74.4 million metric tons in total). However, the realized annual growth rate of e-waste recycling in the past decade was only 0.05 kilograms per capita. It will need to be at least 10 times higher to ensure recycling of all e-waste by 2030.

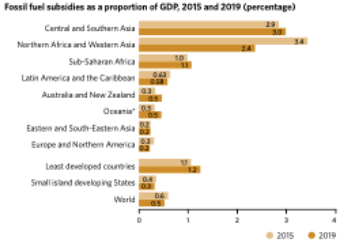
E-waste generated and recycled, 2010–2019, projected e-waste generated and required growth in recycling, 2020–2030 (kilograms per capita)



Progress to eliminate fossil fuel subsidies remains uneven, threatening the achievement of the Paris Agreement and 2030 Agenda

Fossil fuel subsidies from Governments provide incentives to produce and consume fossil fuels, such as coal, crude oil and natural gas, over the development and use of clean and renewable energy. They contribute to the climate crisis and air pollution, and negatively impact public health. Fossil fuel subsidies saw a decline in 2019 to $432 billion due to lower fuel prices, breaking an upward trend from 2017 ($450 billion) and 2018 ($548 billion). Subsidies were expected to decline sharply in 2020 due to cratering demand and the oil price shock. That drop in fossil fuel subsidies (measured as a proportion of GDP) is likely to be smaller than expected, however, due to a simultaneous decrease in GDP worldwide in 2020. With lower fuel prices over the last two years, many countries took the opportunity to press for reforms and phase out subsidies. However, progress remains uneven. With fuel prices rising sharply in 2021, there is also a danger of regressing and failing to meet the commitments made in the 2030 Agenda for Sustainable Development and the Paris Agreement.

Fossil fuel subsidies as a proportion of GDP, 2015 and 2019 (percentage)

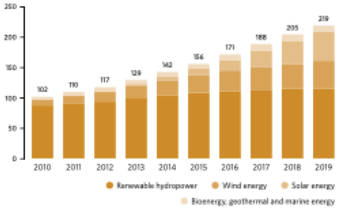


Despite progress, developing countries still have vast untapped potential for renewable energy

Globally, new renewable electricity capacity installations witnessed remarkable development over the past decade, outpacing installations in non-renewable electricity capacity since 2012 and consistently since 2015. In 2018, for the first time, the majority of new renewable electricity capacity was installed in developing countries. The significant increase in capacity in these countries can be attributed primarily to the uptake of new solar and wind capacity, which increased by a compound annual growth rate of 72 per cent and 22 per cent, respectively, from 2010 to 2019. The most recent data show that renewable energy capacity continued to grow at an even higher level in 2020, despite COVID-19.

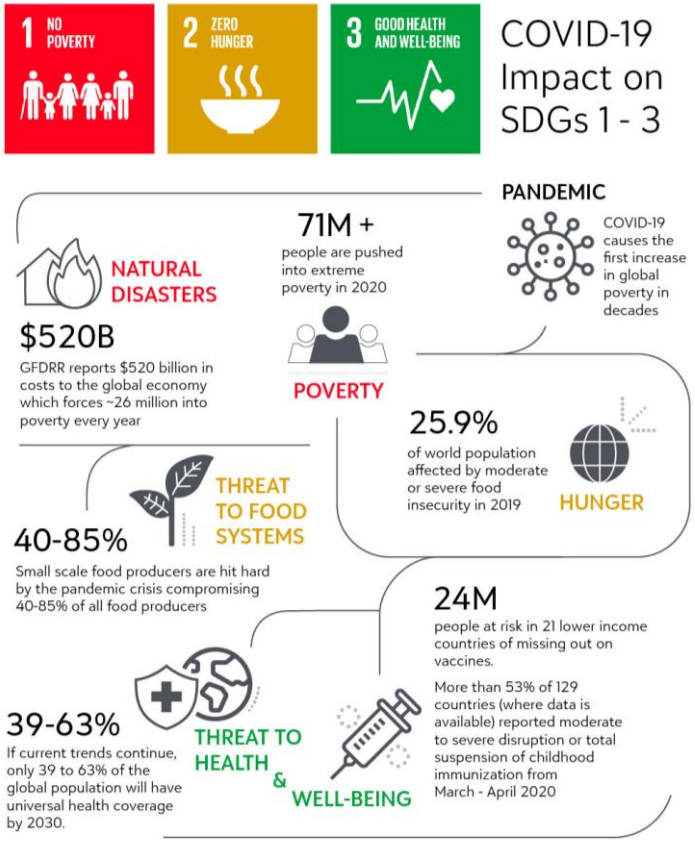
In 2019, developing countries had 219 watts per capita of renewable energy capacity. However, renewable energy capacity was 880 watts per capita in developed countries, four times higher than that of developing countries, suggesting there is still room for growth.

Installed renewable energy-generating capacity in developing countries, by technology, between 2010 and 2019 (watts per capita)

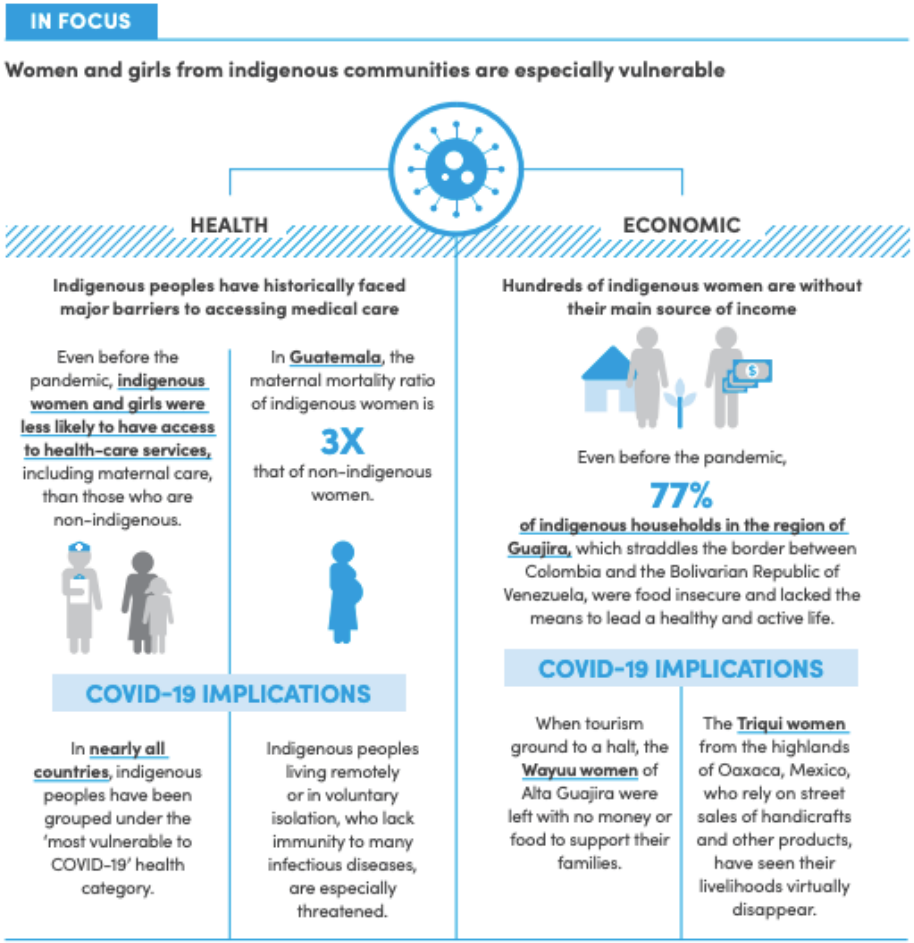


Source: [The Sustainable Development Goals Report 2021]

COVID-19 INFOGRAPHICS



Source: [Post-Pandemic Outlook on the Sustainable Development Goals Through a CSR Lens]

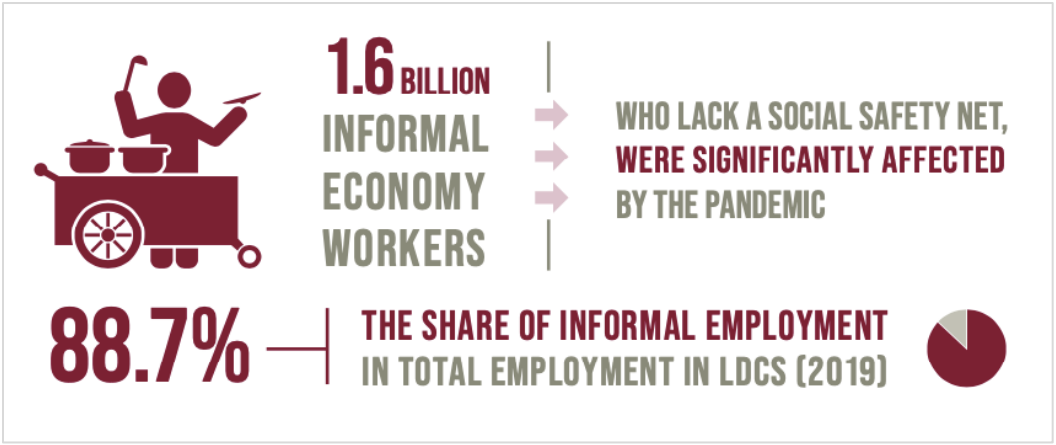


Source: [The Gender Snapshot 2020]

SOME EXAMPLES OF WHAT TO LOOK OUT FOR FROM THE SUSTAINABLE DEVELOPMENT GOALS REPORTS' INFOGRAPHIC DEVELOPMENT

Identify the problem and indicate your answer in the chat

WHAT IS THE PROBLEM?



A. Not focused: too many messages at one time

B. Inappropriate icons

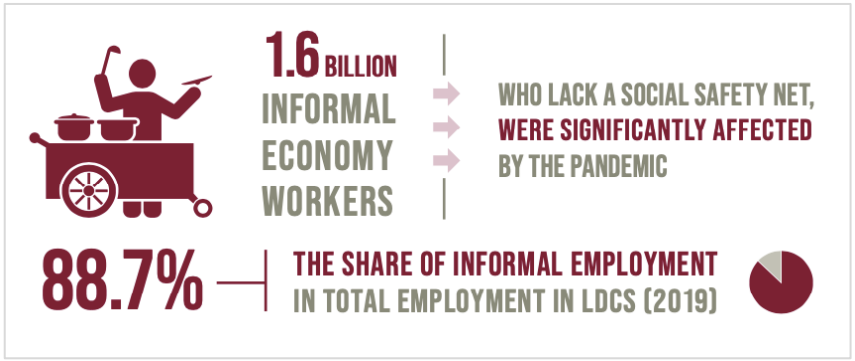
C. Imbalance between visual and written elements

D. Incorrect chart usage

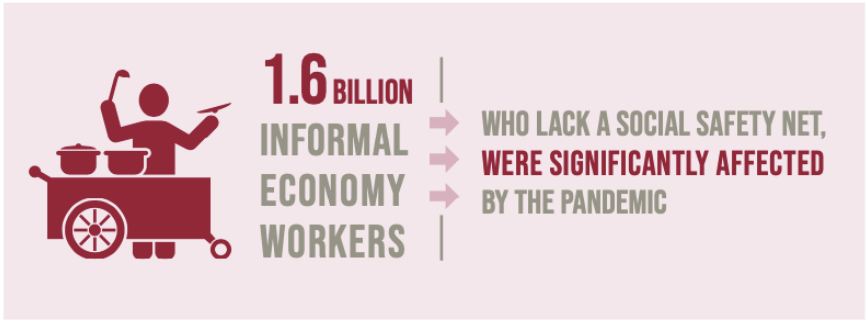
E. Not data-driven

SDG REPORT EXAMPLE: DRAFT VS. FINAL

DRAFT



FINAL



A. **Not focused: too many messages at one time**

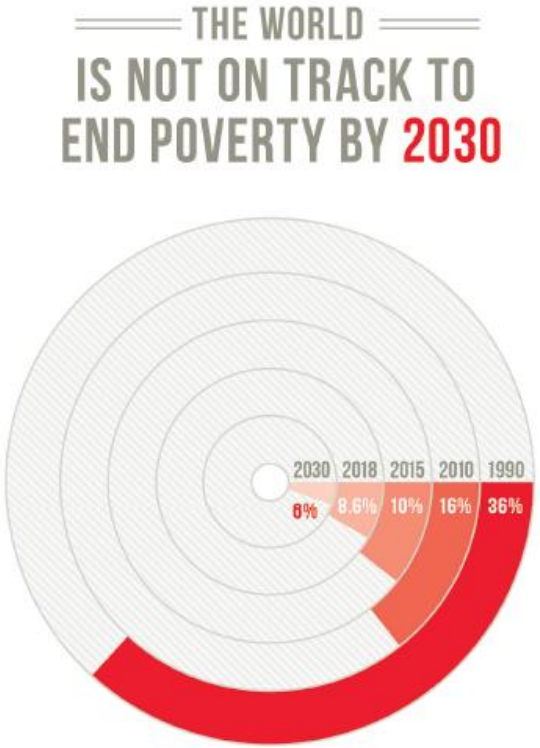
B. Inappropriate icons

C. Imbalance between visual and written elements

D. Incorrect chart usage

E. Not data-driven

WHAT IS THE PROBLEM?



A. Not focused: too many messages at one time

B. Inappropriate icons

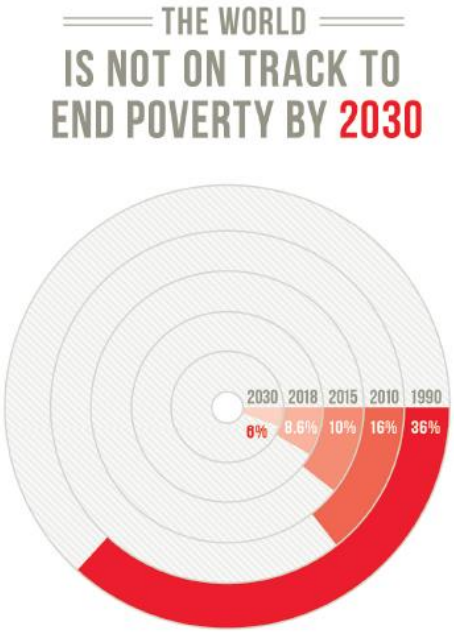
C. Imbalance between visual and written elements

D. Incorrect chart usage

E. Not data-driven

SDG REPORT EXAMPLE: DRAFT VS. FINAL

DRAFT



A. Not focused: too many messages at one time

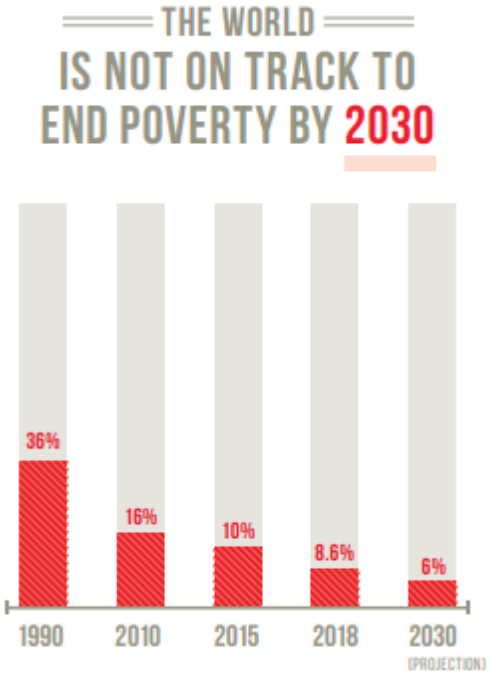
B. Inappropriate icons

C. Imbalance between visual and written elements

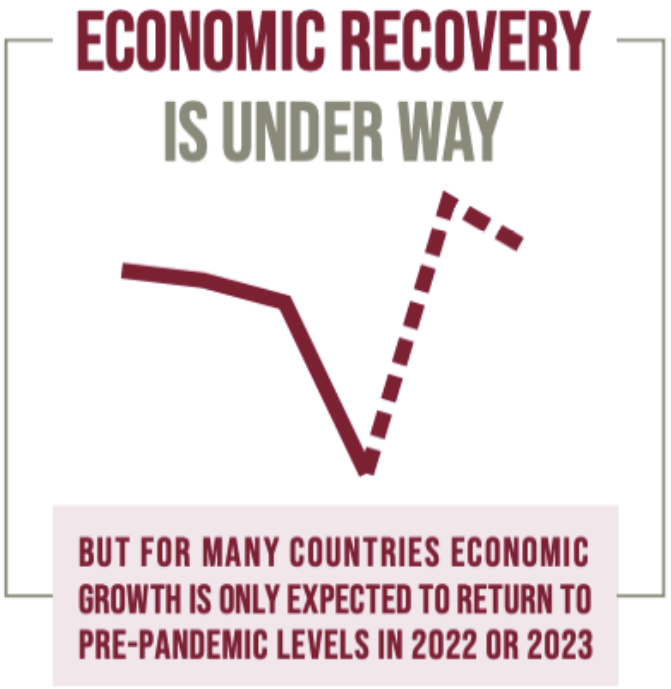
D. Incorrect chart usage

E. Not data-driven

FINAL



WHAT IS THE PROBLEM?



A. Not focused: too many messages at one time

B. Inappropriate icons

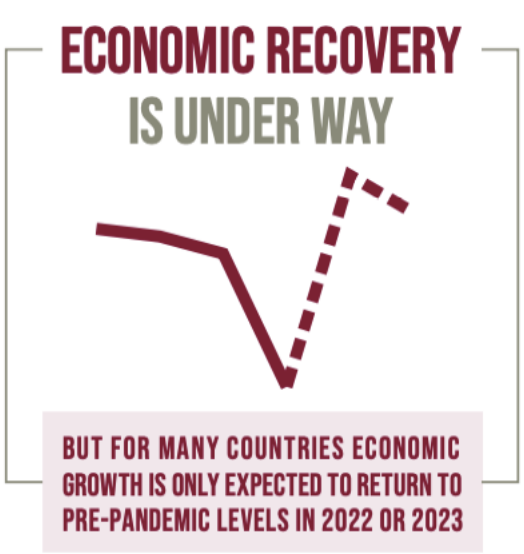
C. Imbalance between visual and written elements

D. Incorrect chart usage

E. Not data-driven

SDG REPORT EXAMPLE: DRAFT VS. FINAL

DRAFT



A. Not focused: too many messages at one time

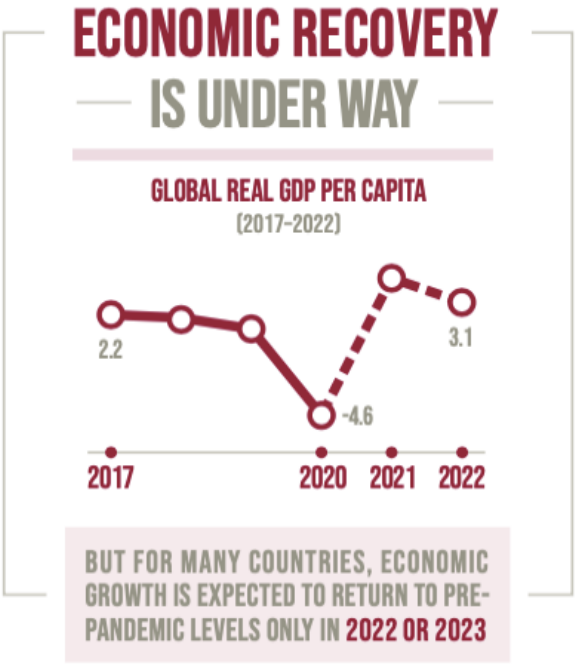
B. Inappropriate icons

C. Imbalance between visual and written elements

D. Incorrect chart usage

E. Not data-driven

FINAL



RESOURCE SLIDES:
HELPFUL RESOURCES FOR DEVELOPING DATA VISUALIZATIONS

PROCESS FOR DEVELOPING AN INFOGRAPHIC

Resource slide

Know your audience and purpose
Who is the target audience? Tailor the infographic to your audience, consider which release channel is appropriate e.g., website, social media

Let the data lead the story...
..but don't assume you know what the story is e.g., what about an emerging trend, is the story relevant to the audience?

Add context
Challenge yourselves to highlight or introduce something to improve the story e.g., annotate key dates on a time series chart

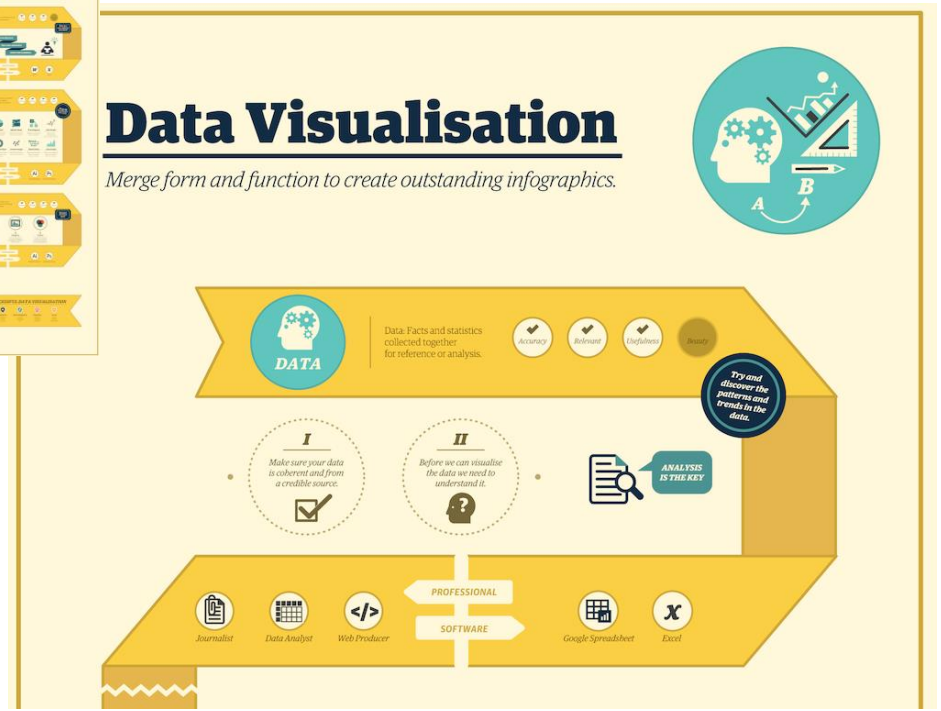
Always be accurate
Keep checking back with your sources, as manipulation of data will occur throughout the developmental process

Organise the information
Left to right, top to bottom - is how this will be read

Keep it simple - show don't tell
Not just large numbers, combine white space with simple visuals

Teach users something new
Will the user learn something? Yes = success, No = time to refine or rethink

Source: UK ONS "Infograhpic Guidelines"



Source: See the rest of the process at Venngage "Data Visualization" process

Resource slide

INFOGRAPHICS- WHAT TO AVOID

An infographic **IS**:
a self-contained **visual story**, presenting **information**, **data** or **knowledge** clearly, with **meaning** and **context**, and without bias.

An infographic **is NOT**:
a visual list, group of large numbers with supporting graphics, collection of stats, or codependent on another release, article, or report.

What to avoid:

- Using **jargon or too technical terms**
- Trying to **include everything** – some infographics are far too big/long…
- Using **too much text**
- Using overly **complicated forms** of visualizing the data – simple is generally best
- Not including **complete data** in the graph can give an incomplete picture to the viewer resulting in incorrect decision-making.
- **Hiding important data**. This makes sure that the viewer is kept distracted from the actual part of the graph that matters the most.
- **Going against convention**. For example, using a green color to indicate something wrong and red to indicate something right.

DEVELOPING KEY MESSAGES

Resource slide

Providing the right people with the right information in the right format

Step 1: Consider Why, Who and What

- ✓ **Why** do you need them
- ✓ **Who** are your target audiences
- ✓ **What** are the main pointes you want the audience to hear, understand and remember
  - ➢ Make sure that your messages are data-driven and evidence-based.

Step 2: Draft your key messages

- **Clear**: easy to understand, avoid jargon
- **Concise**: Short and specific to the point, simple but interesting
- **Consistent:** core messages must build upon each other to create a consistent story
- **Tailored:** Communicate effectively with different target audiences by adapting language and depth of information
- **Telling good stories** with the appropriate presentation of data, including visualizations, infographics and other tools
- **Link data to people**

Step 3: Review and revise

DRAFTING A HEADLINE

Resource slide

How to draft a Headline

- Know your audience
- Write the key messages first, then the headline
- Simple and clear, but powerful and pervasive
- Pick the most important issue and be specific
- Create a sense of urgency
- Check out newspaper, magazine headlines for inspiration
- Write several different headlines
- Pick the best one after consultation

EXAMPLE

KEY MESSAGES (Extreme poverty in the world):

- The share of the world's population living in extreme poverty declined to 10 per cent in 2015, down from 16 per cent in 2010 and 36 per cent in 1990. More than a billion people have lifted themselves out of poverty over the last 25 years.
- However, the pace of change is decelerating.
- Nowcast shows the 2018 rate of extreme poverty at 8.6 per cent, and baseline projections suggest that 6 per cent of the world's population will still be living in extreme poverty in 2030 if current trends continue.
- Extreme poverty remains stubbornly high in low-income countries and those affected by conflict and political upheaval, particularly in sub-Saharan Africa.

POSSIBLE HEADLINES (Extreme poverty in the world):

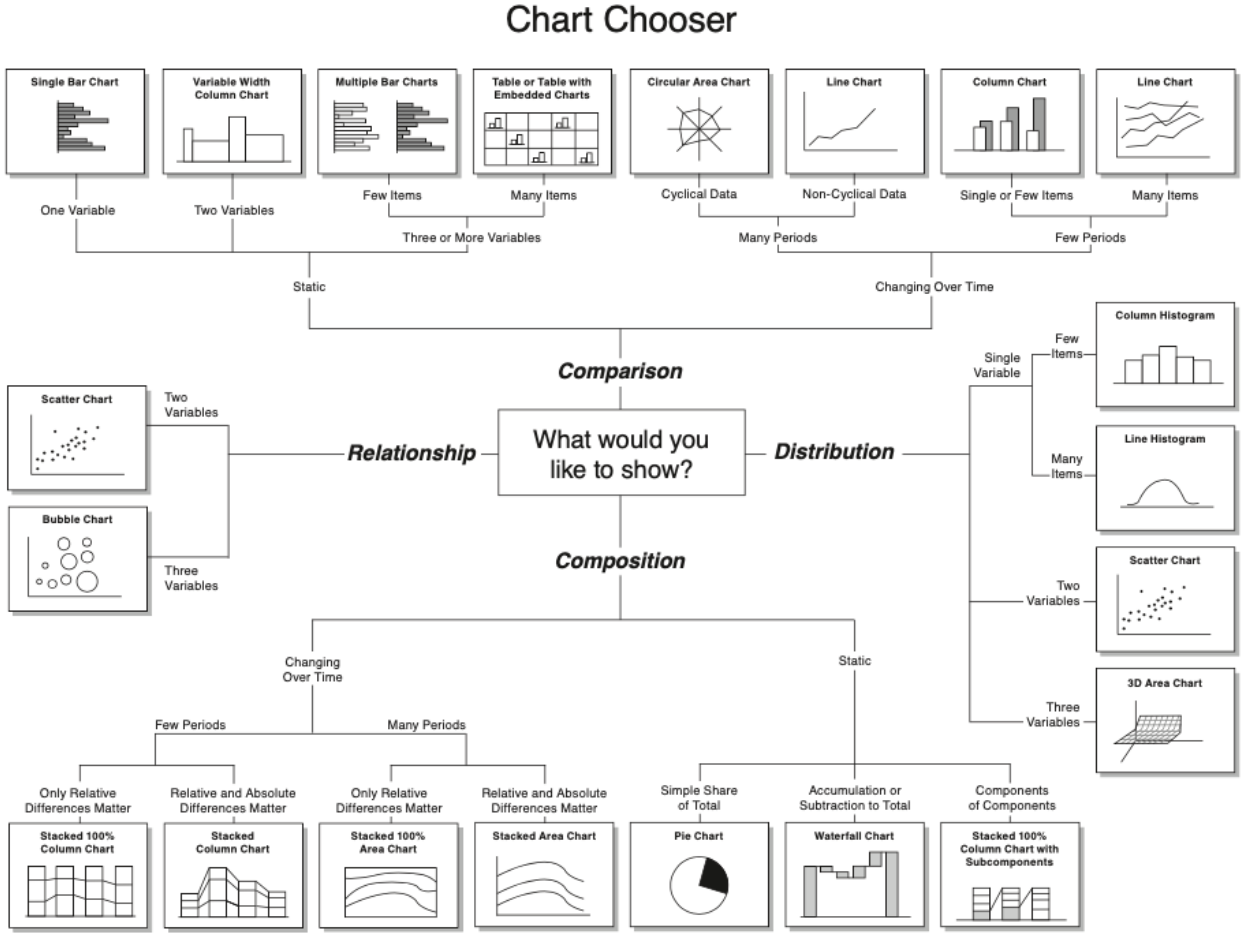
- **It is becoming less likely that the world will keep its promise to end extreme poverty by 2030**
- **Progress against poverty continues but has slowed, jeopardizing achievement of the Goal**
- **Conflict and political upheaval have slowed earlier progress to end extreme poverty globally**
- **Ending poverty by 2030 will require an intense focus on sub-Saharan Africa**

WHERE TO BEGIN ON CHARTS

Resource slide

Which chart to use? It depends!

- Experiment with different types to find the most appropriate to convey the message
- Tables/charts should be able to stand alone, whether published in a report, article, publication or web page.
- *Key elements*
  - Table title: what, where, when?
  - Unit of measurements
  - Footnote and sources



Source: [The Extreme Presentation Method]

© 2020 Andrew V. Abela, Dr.Abela@ExtremePresentation.com
www.extremepresentation.com

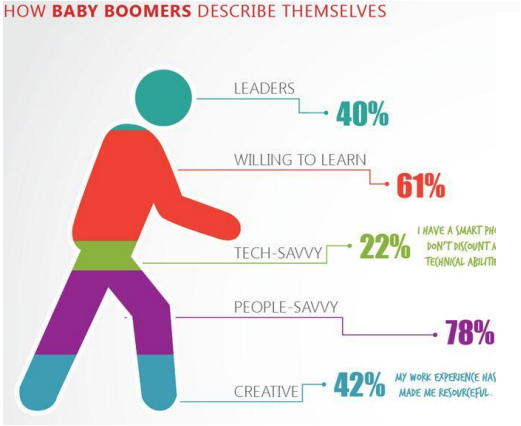
THE IMPORTANCE OF ACCURACY

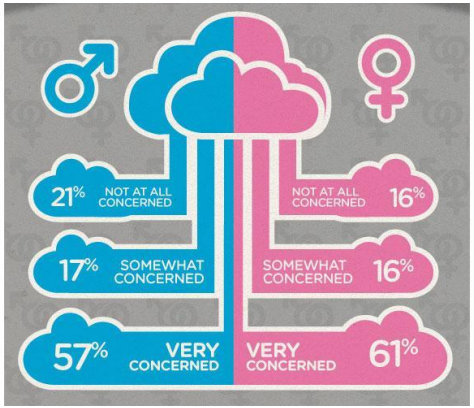
Resource slide

Ensure what you include:

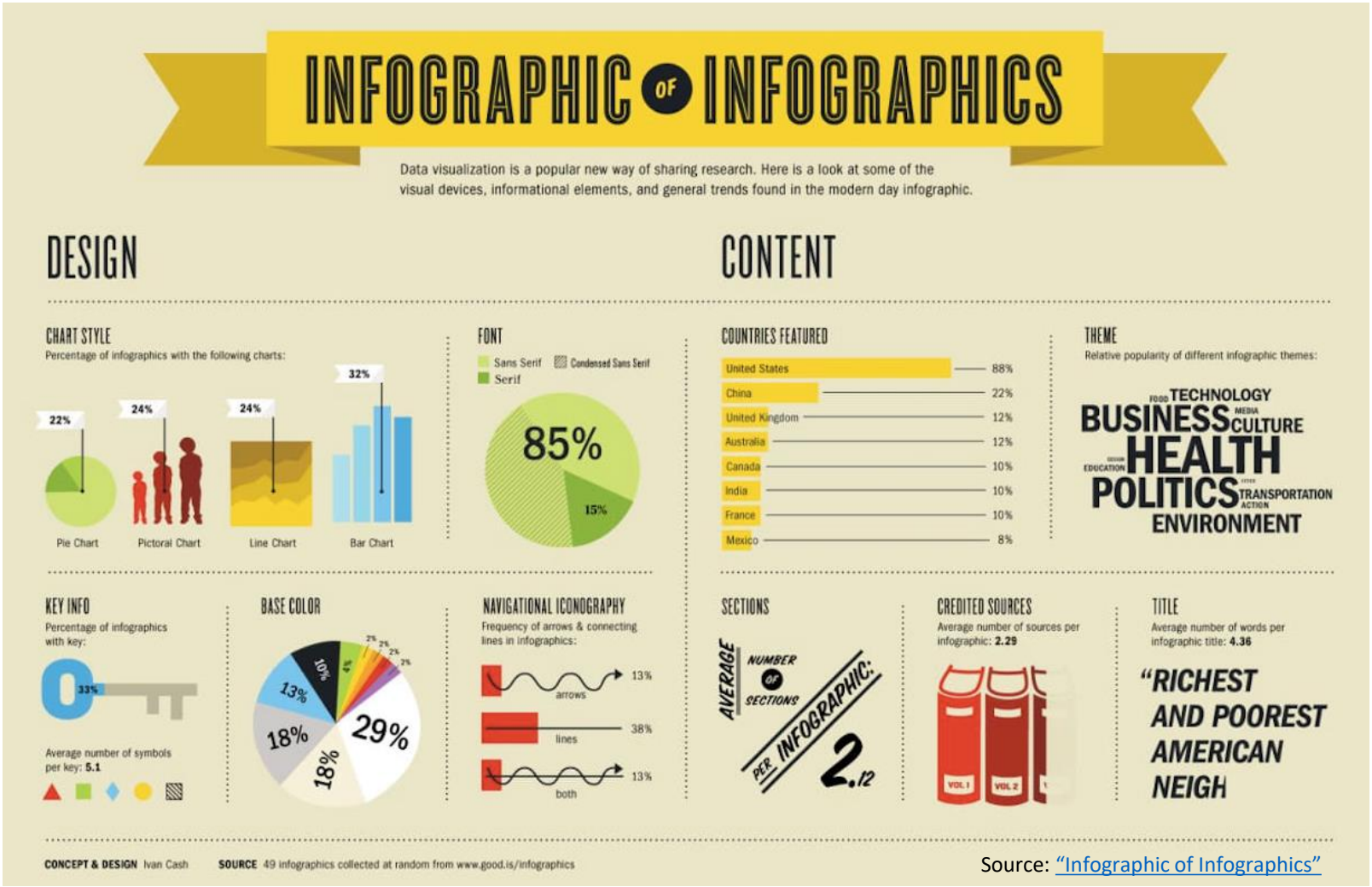
- Makes sense
- Your percentages add up (or you have explained what they mean if it is not clear)
- Your graphs accurately display the information you include

Examples of what not to do





Resource slide



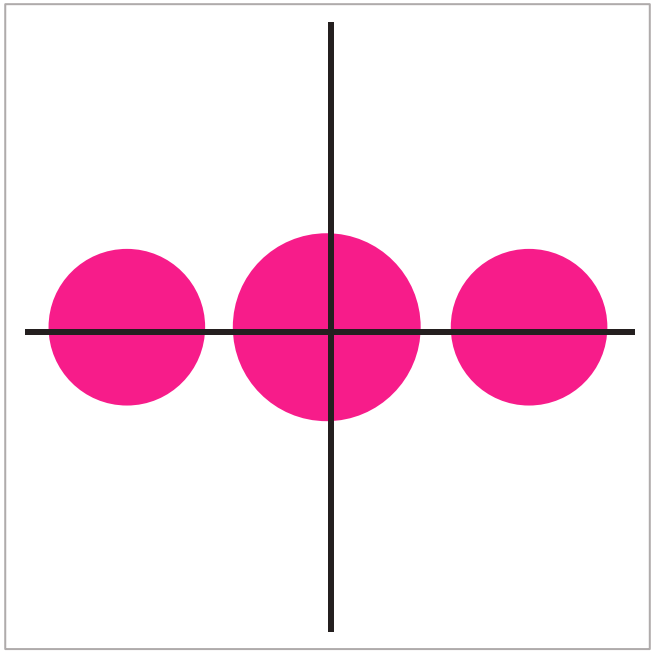
Source: "Infographic of Infographics"

DESIGN CONSIDERATIONS

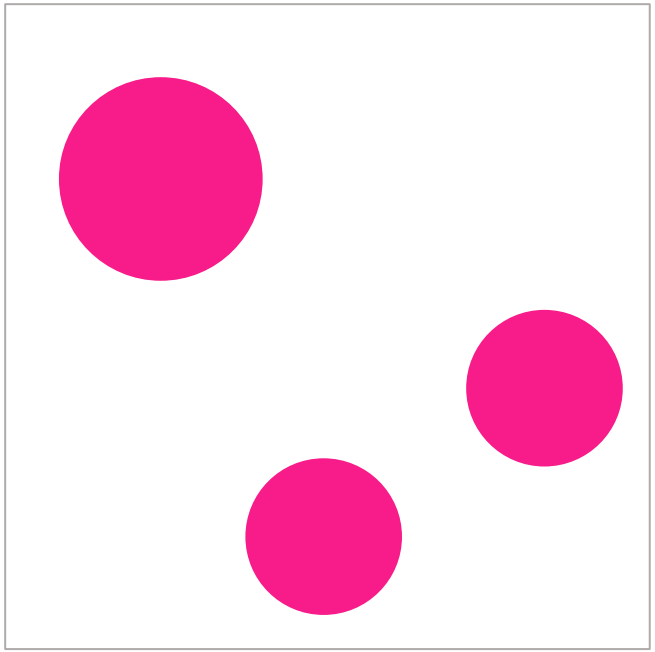
Graphic Design Basics

- Symmetry and Asymmetry
- Scale
- Framing
- Hierarchy
- Grids

SYMMETRY AND ASYMMETRY

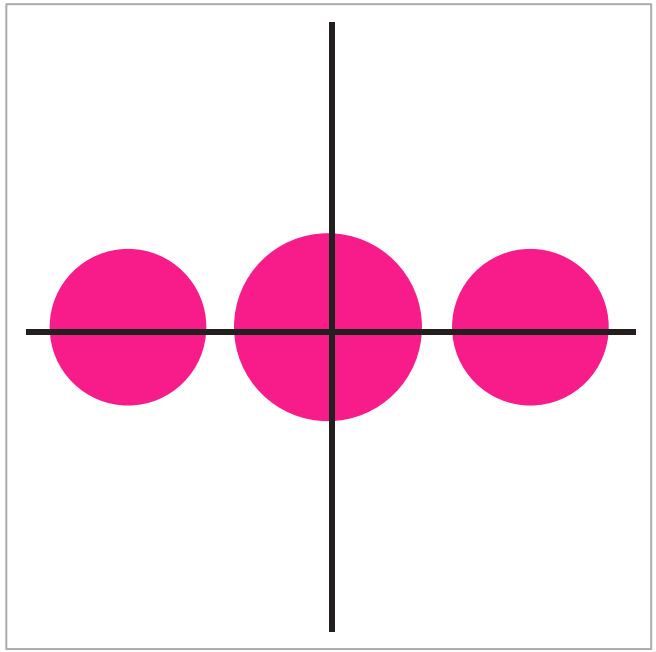


Symmetry

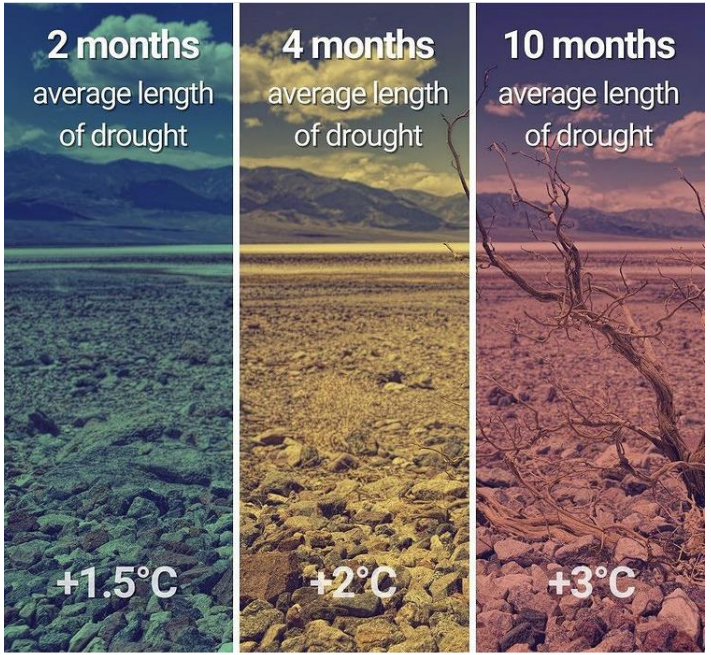


Asymmetry

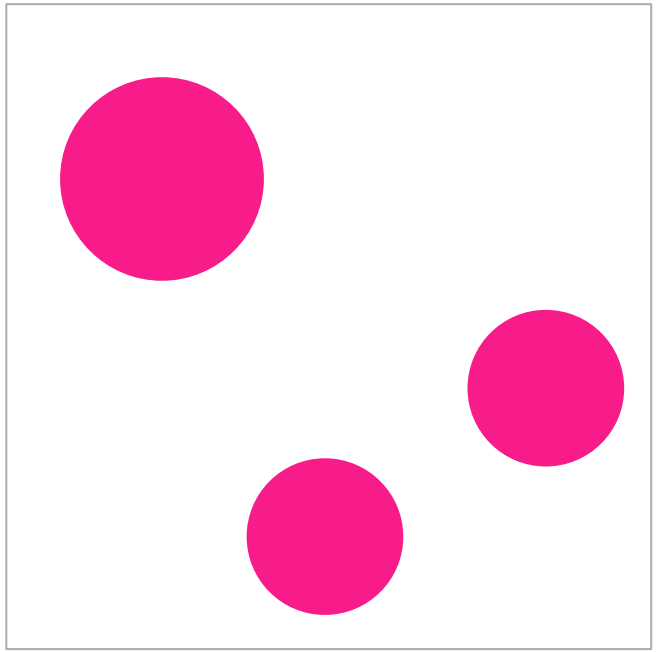
SYMMETRY AND ASYMMETRY



Symmetry



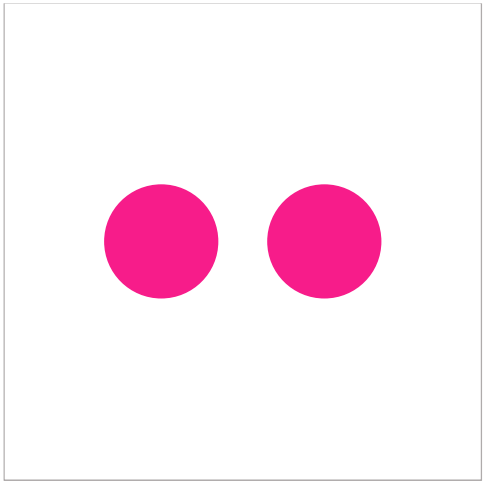
SYMMETRY AND ASYMMETRY

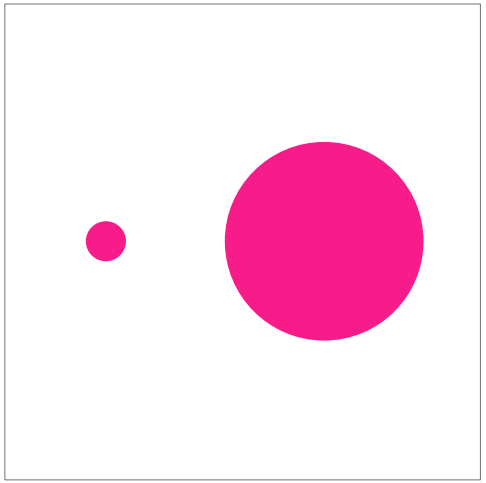


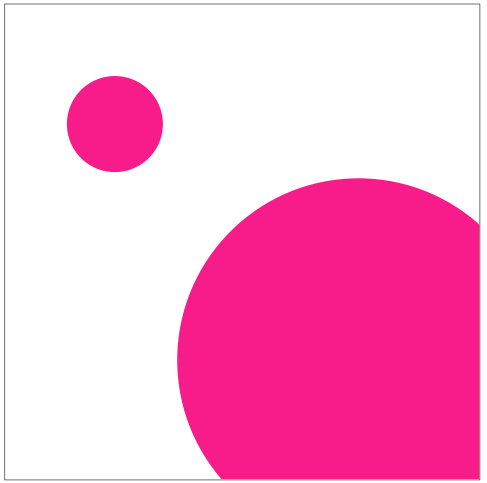
Asymmetry

Credit: George Disario

SCALE







SCALE

Credit: Pentagram

SCALE

Credit: Telegramme Paper Co.

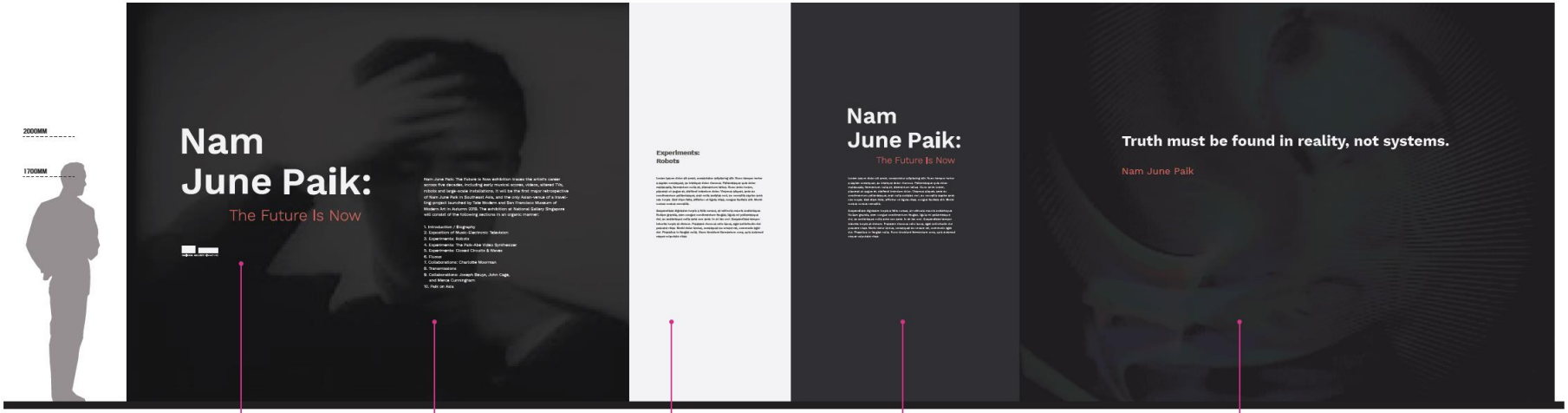
FRAMING

Margin

Full Bleed

Partial Bleed

HIERARCHY



Exhibition Title

Gallery Introduction

Suggested word count:
45 words

Font size: 84pt

Section Panel

Suggested word count:
60 words

Font size: 60pt

Secondary Introduction

Suggested word count:
60 words

Font size: 60pt

Quote

Suggested word count:
10 words

Font size: 320pt / 210pt

GRID

The Sustainable Development Goals Report 2020
The Global Pandemic is Exacerbating World Hunger
Worldwide, an additional 83–132 million people are likely to have experienced hunger as a result of the pandemic in 2020.
628 MILLION
688 MILLION
820 MILLION
2014
2019
2020
COVID-19 has led to the first rise in extreme poverty in a generation
Before the COVID-19 pandemic, the share of the world's population living in extreme poverty fell from 10.1 per cent in 2015 to 9.3 per cent in 2017. This means that the number of people living on less than $1.90 per day dropped from 741 million to 689 million. However, the rate of reduction had slowed to less than half a percentage point annually between 2015 and 2017, compared with one percentage point annually between 1990 and 2015.
The pandemic has compounded the threats to progress raised by conflict and climate change. Estimates suggest that 2020 saw an increase of between 119 million and 124 million global poor, of whom 60 per cent are in Southern Asia. Nowcasts point to the first rise in the extreme poverty rate
The global poverty rate is expected to be 7 per cent (around 600 million people) in 2030, missing the target of eradicating poverty.
since 1998, from 8.4 per cent in 2019 to 9.5 per cent in 2020, undoing the progress made since 2016. The impacts of the pandemic will not be short-lived. Based on current projections, the global poverty rate is expected to be 7 per cent (around 600 million people) in 2030, missing the target of eradicating poverty.
8
Goal 1 | No Poverty
Number of people living below $1.90 a day, 2015–2017, 2018–2020 nowcast, and forecast before and after COVID-19 (millions)
Forecast before COVID-19
COVID-19 baseline projection
COVID-19 downside projection
Good results from a global initiative to reduce disaster risk could be undermined by the pandemic
20%
45%
25%
10%
Lorem ipsum dolor
Lorem ipsum dolor sit
Lorem ipsum
Lorem ipsum dolor
Working poverty disproportionately affects women and youth, and the pandemic is likely to magnify those disparities
The share of the world's workers living in extreme poverty fell by more than half from 2010 to 2019 – from 14 per cent to 6.6 per cent. However, lockdowns and related public health measures due to COVID-19 have severely affected the informal economy, where the vast majority of the working poor are employed. The related income losses threaten to roll back global progress on reducing working poverty.
Although the gender gap in working poverty globally has narrowed over the years, a substantial gap persists in many parts of the world, particularly in the least developed countries (LDCs). There, one third (33.5 per cent) of employed women were living in poverty in 2019, compared with 28.3 per cent of employed men. Worldwide, young workers are twice as likely to be living in poverty as adults, reflecting lower earnings and poorer quality jobs. Since the
Proportion of employed population living below $1.90 a day, 2019 (percentage)
Women
Men
Total
COVID-19 crisis has had a disproportionate impact on the livelihoods of women and young people, it is likely to exacerbate these longstanding disparities.
9

The Sustainable Development Goals Report 2020
The Global Pandemic is Exacerbating World Hunger
Worldwide, an additional 83–132 million people are likely to have experienced hunger as a result of the pandemic in 2020.
628 MILLION
688 MILLION
820 MILLION
2014
2019
2020
COVID-19 has led to the first rise in extreme poverty in a generation
Before the COVID-19 pandemic, the share of the world's population living in extreme poverty fell from 10.1 per cent in 2015 to 9.3 per cent in 2017. This means that the number of people living on less than $1.90 per day dropped from 741 million to 689 million. However, the rate of reduction had slowed to less than half a percentage point annually between 2015 and 2017, compared with one percentage point annually between 1990 and 2015.
The pandemic has compounded the threats to progress raised by conflict and climate change. Estimates suggest that 2020 saw an increase of between 119 million and 124 million global poor, of whom 60 per cent are in Southern Asia. Nowcasts point to the first rise in the extreme poverty rate
The global poverty rate is expected to be 7 per cent (around 600 million people) in 2030, missing the target of eradicating poverty.
since 1998, from 8.4 per cent in 2019 to 9.5 per cent in 2020, undoing the progress made since 2016. The impacts of the pandemic will not be short-lived. Based on current projections, the global poverty rate is expected to be 7 per cent (around 600 million people) in 2030, missing the target of eradicating poverty.
8
Goal 1 | No Poverty
Number of people living below $1.90 a day, 2015–2017, 2018–2020 nowcast, and forecast before and after COVID-19 (millions)
Forecast before COVID-19
COVID-19 baseline projection
COVID-19 downside projection
Good results from a global initiative to reduce disaster risk could be undermined by the pandemic
20%
45%
25%
10%
Lorem ipsum dolor
Lorem ipsum dolor sit
Lorem ipsum
Lorem ipsum dolor
Working poverty disproportionately affects women and youth, and the pandemic is likely to magnify those disparities
The share of the world's workers living in extreme poverty fell by more than half from 2010 to 2019 – from 14 per cent to 6.6 per cent. However, lockdowns and related public health measures due to COVID-19 have severely affected the informal economy, where the vast majority of the working poor are employed. The related income losses threaten to roll back global progress on reducing working poverty.
Although the gender gap in working poverty globally has narrowed over the years, a substantial gap persists in many parts of the world, particularly in the least developed countries (LDCs). There, one third (33.5 per cent) of employed women were living in poverty in 2019, compared with 28.3 per cent of employed men. Worldwide, young workers are twice as likely to be living in poverty as adults, reflecting lower earnings and poorer quality jobs. Since the
Proportion of employed population living below $1.90 a day, 2019 (percentage)
Women
Men
Total
COVID-19 crisis has had a disproportionate impact on the livelihoods of women and young people, it is likely to exacerbate these longstanding disparities.
9

United Nations | DESA Statistics Division

UKaid from the British people

THANK YOU!