Making data meaningful

Disability Monograph workshop Sept. 2019, New Caledonia

The goal

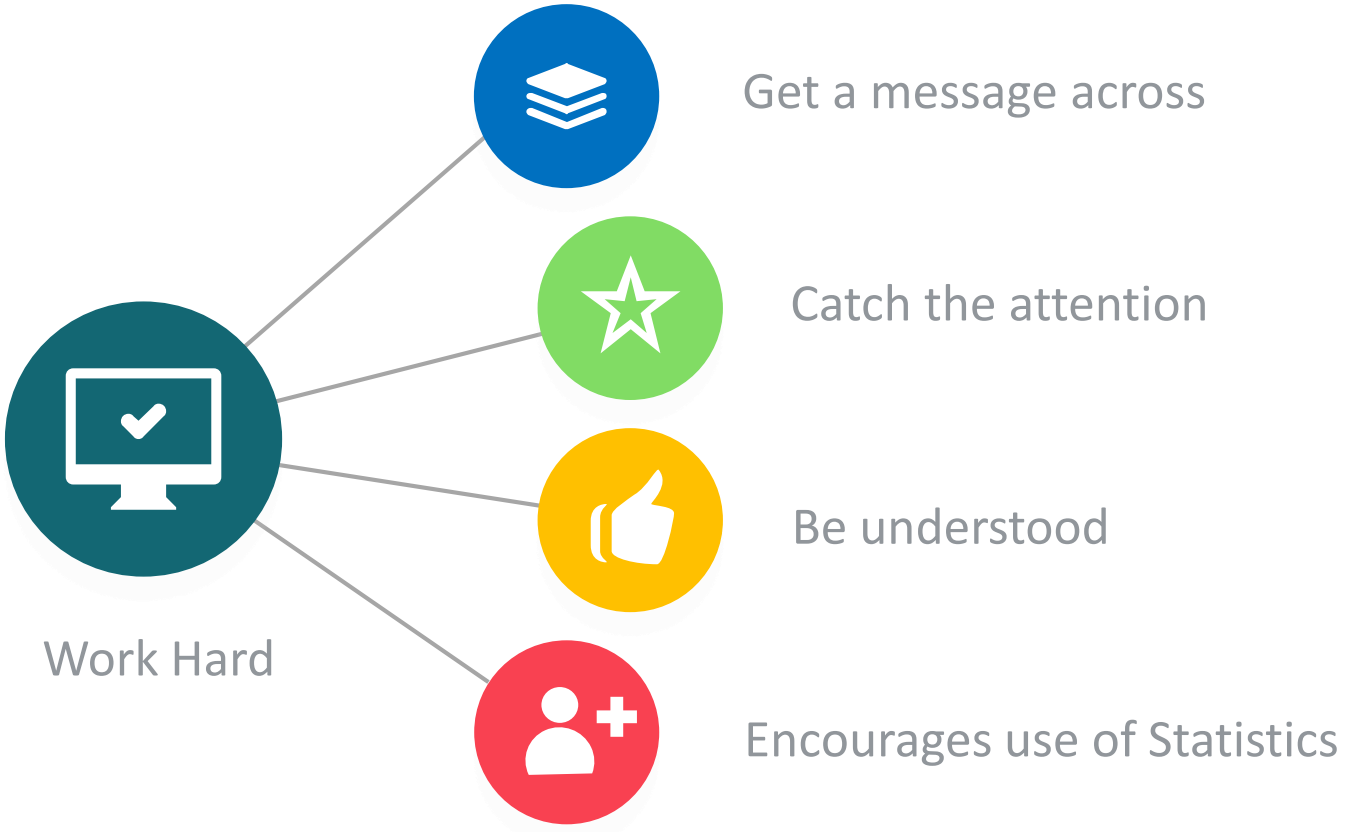
GETTING THE MESSAGE ACROSS

Getting the message across

News releases (reports, fact sheets …) are the vehicle through which your statistical office communicates its key findings to general public.

- The goal is to provide text, charts, tables, maps, infographics and other devices to bring statistics to life for non-statisticians. The visuals have to:
  - get a message across,
  - catch the attention quickly with a headline or an image,
  - be easily understood,
  - encourages others to use statistics.

One goal - four objectives



Text

The text

- **First find a story**; you don't want your release to become just a simple description of numbers! You have to make your data relevant and explain them in terms that people can understand.
- **Present the most important facts first**, followed by points in decreasing order of importance.
- **Do not include too many numbers in the body of the text**. Less important numbers should be relegated to accompanying tables. Use the text to present analysis, trends and context, not to repeat values in the tables.
- **Use simple language and short sentences**, it is at the heart of any successful communication.

Your mission

Find a story

Present the most important facts first

Do not include too many numbers in the text

Use simple language and short sentences

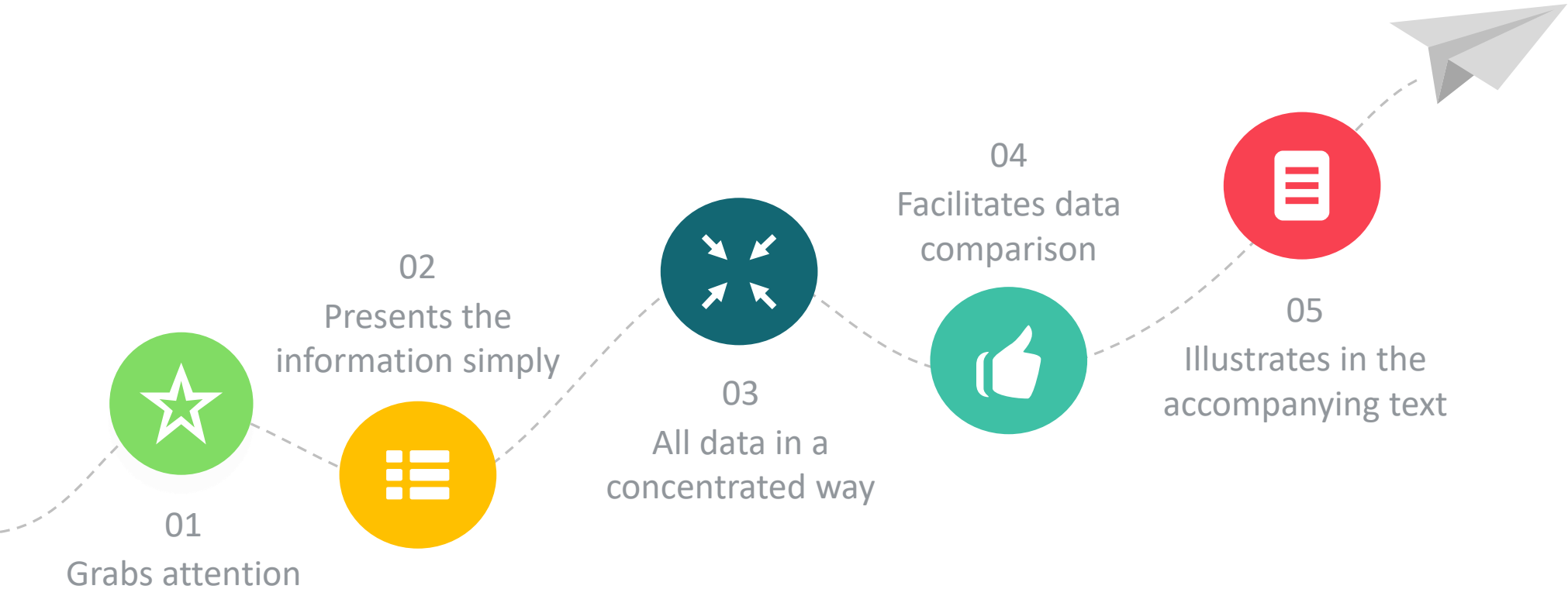
Charts

Charts

Statistics can often be better understood when they are presented in a chart than in a table.

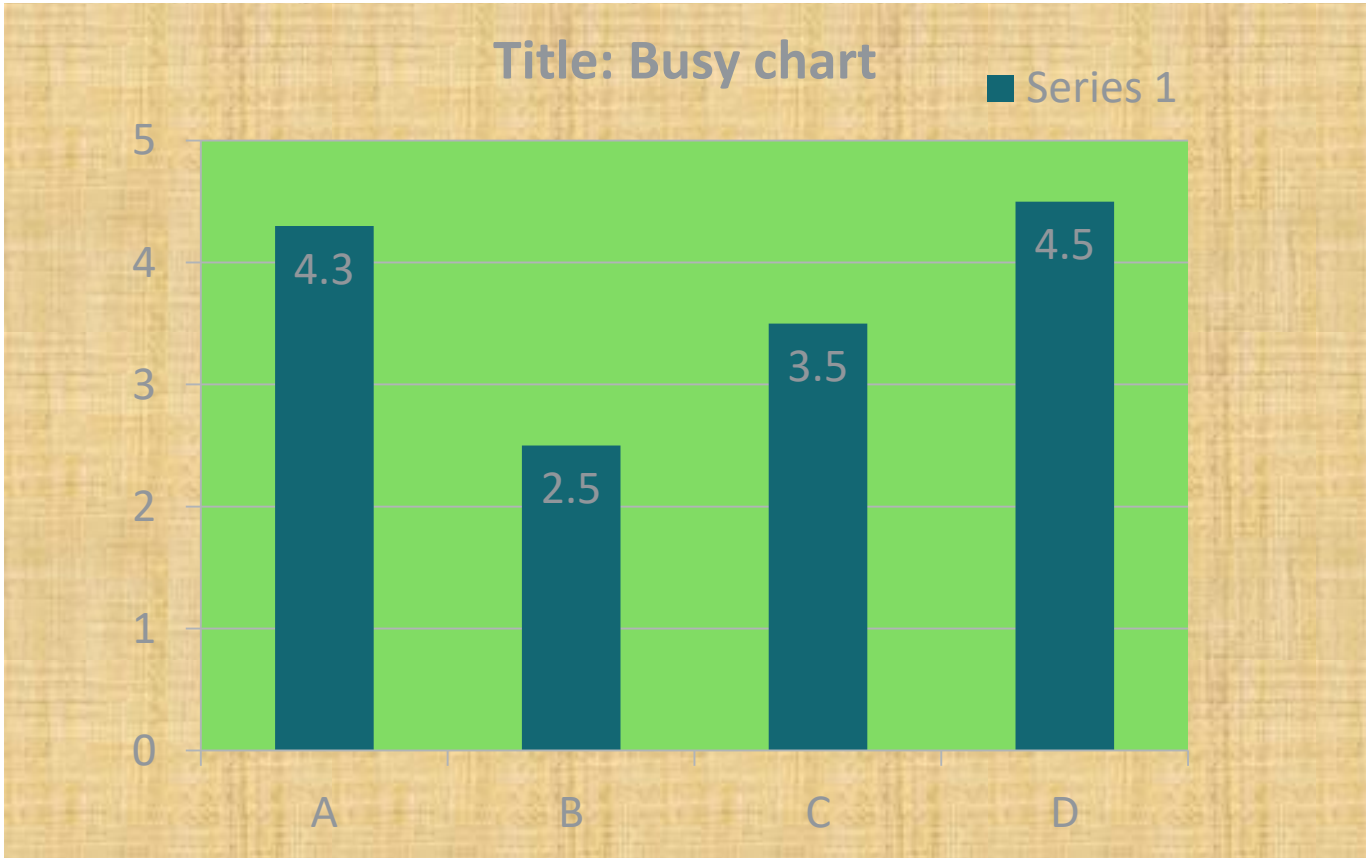
- A good chart should:
  - **grab reader's attention;**
  - **present information simply,** clearly and accurately;
  - **display data in a concentrated way** (e.g. one line chart instead of many pie charts);
  - **facilitate data comparison** and highlights trends and differences;
  - **illustrate messages in the accompanying text.**

What makes an effective chart



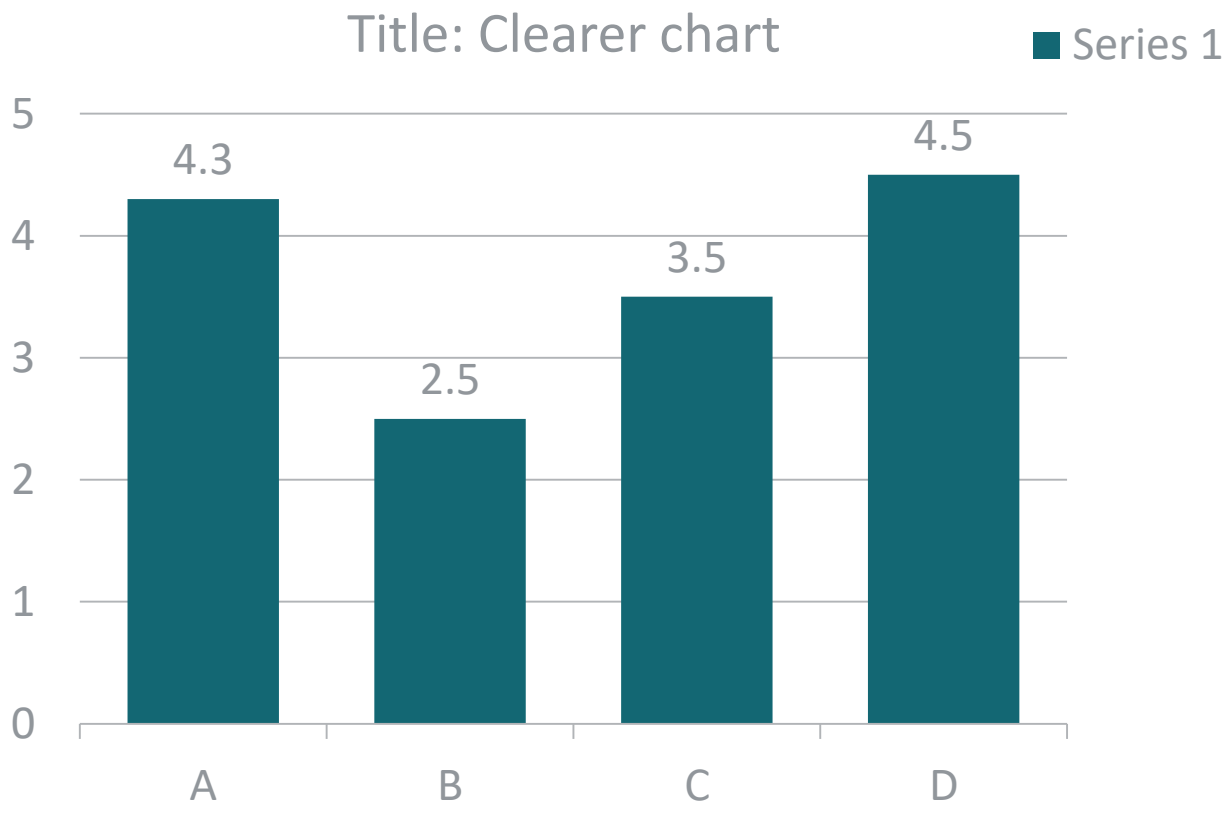
Example

BAD EXAMPLE:



Example

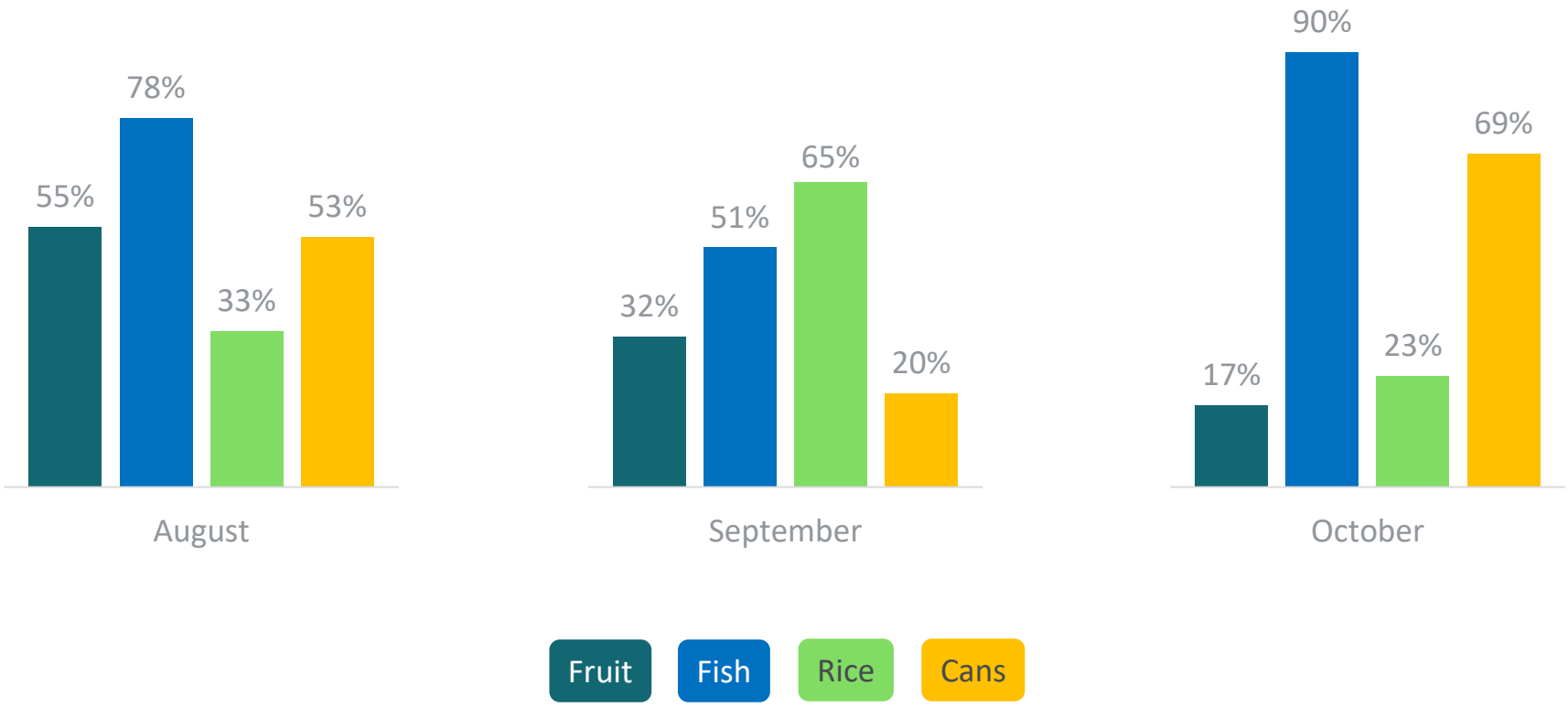
GOOD EXAMPLE:



Source: Household Income & Expenditure Survey 2009/2012, Vanuatu National Statistics Office

Example

Monthly food consumption in household, Port-Vila, 2009/2012



Source: Household Income & Expenditure Survey 2009/2012, Vanuatu National Statistics Office

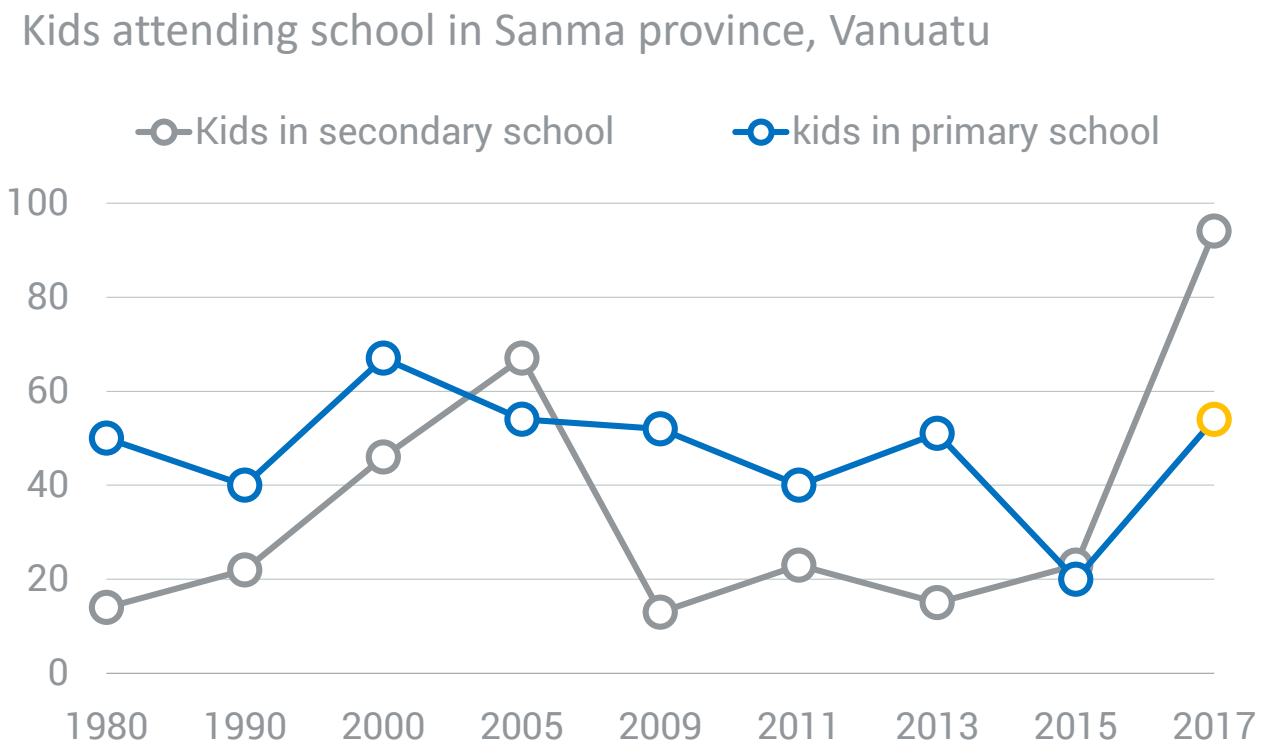
Line Graph

Line graphs illustrate the relationship between two continuous variables: rate over time, number across age groups or percentage over quintile...

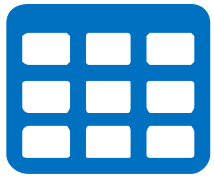
Our Analysis

54%

of the kids in Sanma province will go to primary school in 2017



(Source: fake data only use as an example)

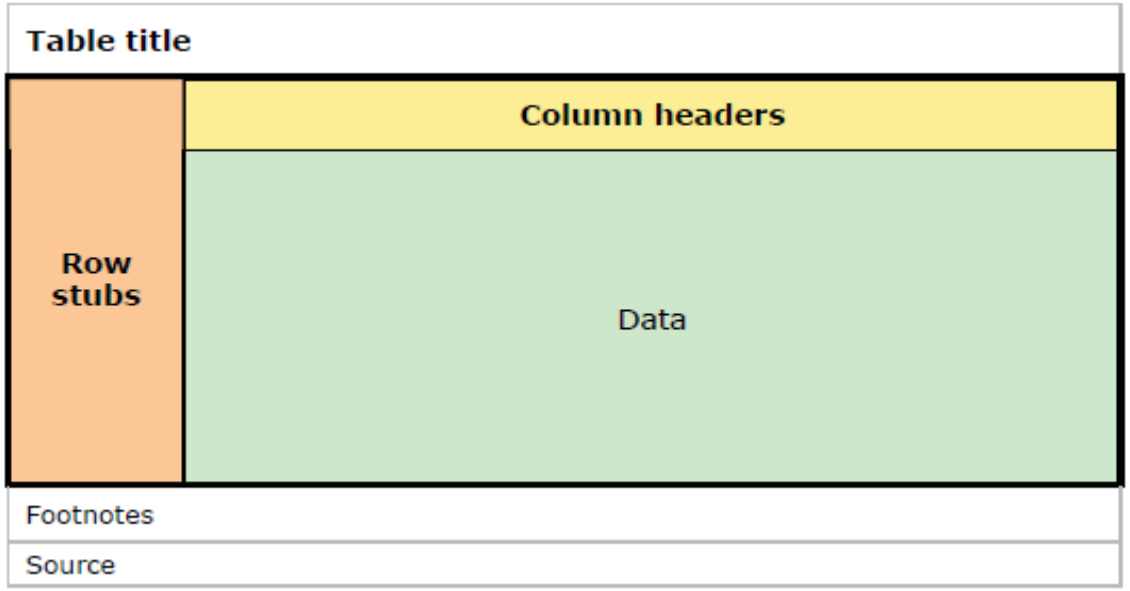


Tables

Tables

Tables remain the most effective way to present a large amount of data.

- Tables should be able to stand alone;
- Data values should be set out so key information can be extracted easily.



Tables

- The **table title** should give a clear and accurate description of the data. It should answer the three questions “what”, “where” and “when”. Be short and concise, and avoid using verbs.
- **Column headers**, at the top of the table, should identify the data presented in each column of the table and provide any relevant metadata (e.g. unit of measurement, time period or geographic area).
- **Row stubs**, in the first column of the table, should identify the data presented in each row of the table.
- **Footnotes**, at the bottom of the table, may provide any additional information needed to understand and use the data correctly (e.g. definitions).
- The **source line**, at the bottom of the table, should provide the source of the data, i.e. the organization that produced the data and the data collection method (e.g. population census or labour force survey).

BAD EXAMPLE:

Total energy consumption, by sector (in percent)

	1980	1985	1990	1995	2000	2002	2003
Transport	27.81	27.92	28.24	31.12	36.82	39.48	39.13
Residential	31.11	33.91	30.41	27.61	24.33	23.71	23.97
Industry	31.47	27.21	23.86	22.11	21.41	19.53	18.78
Agriculture	n/a	n/a	3.51	3.7	3.11	2.91	2.82
Services	9.61	10.96	13.98	15.46	14.33	14.37	15.3
Total	100	100	100	100	100	100	100

Tables

GOOD EXAMPLE:

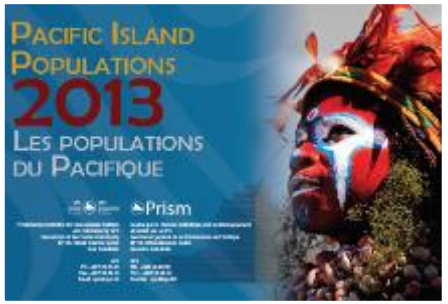
Share of total energy consumption, by sector (in percent) in Vanuatu

	1980	1985	1990	2000	1995	2002	2003
Transport	27.8	27.9	28.2	31.1	36.8	39.5	39.1
Residential	31.1	33.9	30.4	27.6	24.3	23.7	24.0
Industry	31.5	27.2	23.9	22.1	21.4	19.5	18.8
Agriculture	n/a[1]	n/a[1]	3.5	3.7	3.1	2.9	2.8
Services	9.6	11.0	14.0	15.5	14.4	14.4	15.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] n/a: not applicable

Source: Household Income & Expenditure Survey 2009/2012, Vanuatu National Statistics Office

Tables



COUNTRY/TERRITORY PAYS / TERRITOIRE	GENERAL CHARACTERISTICS CARACTÉRISTIQUES GÉNÉRALES					MID-YEAR POPULATION ESTIMATE ESTIMATION DE LA POPULATION EN MILIEU D'ANNÉE					
	Last population census Dernier recensement	Population count at last census Population au dernier recensement	Land area (km²) Superficie (km²)	Density (persons/km²) Densité (habitants/km²)	Urban population (%) Population urbaine (%)	2013		2020		2030	
						Total	%	Total	%	Total	%
MELANESIA			539,970	17		9,392,000	89	10,837,600	90	13,021,800	91
Fiji	2007	837,271	18,333	47	51	859,200	8	887,200	7	936,200	7
New Caledonia	2009	245,580	18,576	14	67	259,000	2	281,500	2	310,900	2
Papua New Guinea (PNG)	2011	7,059,653 P	462,840	16	13	7,398,500	70	8,635,200	72	10,491,900	73
Solomon Islands	2009	515,870	28,000	22	20	610,800	6	724,400	6	912,400	6
Vanuatu	2009	234,023	12,281	22	24	264,700	3	309,300	3	370,400	3
MICRONESIA			3,156	166		524,800	5	570,700	5	618,100	4
Federated States of Micronesia (FSM)	2010	102,843	701	147	22	103,000	1	101,500	1	97,900	1
Guam	2010	159,358	541	323	94	174,900	2	197,600	2	214,800	1
Kiribati	2010	103,058	811	134	54	108,800	1	125,599	1	149,800	1
Marshall Islands	2011	53,158	181	299	74	54,200	0	55,900	0	58,700	0
Nauru	2011	10,084	21	499	100	10,500	0	11,700	0	13,700	0
Northern Mariana Islands (CNMI)	2010	53,883	457	122	90	55,600	1	60,100	0	64,500	0
Palau	2012	17,445	444	40	77	17,800	0	18,300	0	18,600	0

Source: Pacific Island Populations Poster 2013

Maps

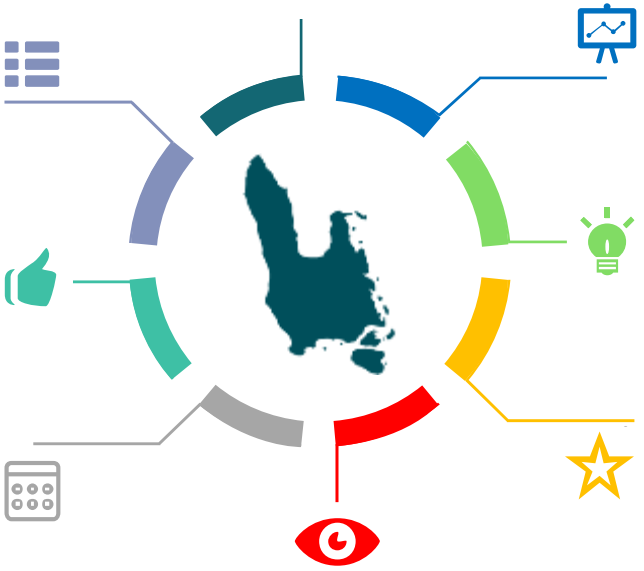
Maps

Why a map is worth a thousand numbers.

A good map:

- is simple and easily understood;
- has a clear message;
- gives an accurate representation of the data;
- attracts the reader's attention to the most important information;
- is well presented and attractive;
- can stand by itself; and
- is accessible to colour-blind persons.

Maps



Simple

Clear message

Accurate representation of the data

Accessible to colour-blind persons

Well presented and attractive

Stand by itself

Attracts to the most important information

Using maps in statistics

Maps can be very useful both in the preparation of censuses and surveys and in the analysis and reporting of results. You should consider using maps if you want to:

- show the geographical location and spatial distribution of your data;
- compare different areas;
- summarise a large volume of data and reduce their complexity;
- communicate a clear message;
- attract people's attention; and
- store spatial information in a geographical information system.

At the Pacific Community (SPC) we mainly use the Geographic Information Systems (GIS): **PopGIS2 now moving to PopGIS3**

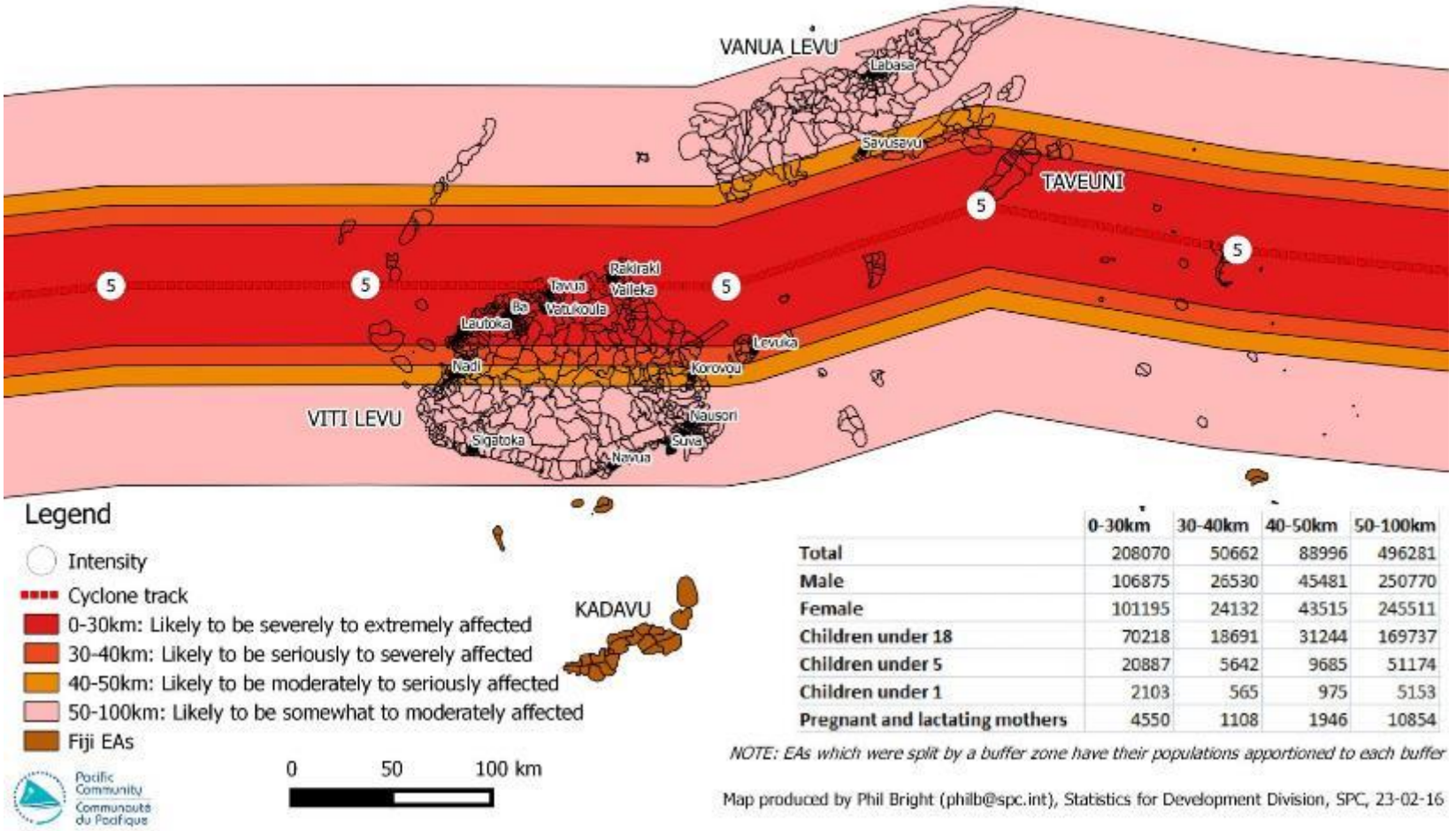
Using maps in statistics

PopGIS2 tool: http://www.spc.int/prism/regional-data-and-tools/popgis-2

Using maps in statistics

CYCLONE WINSTON POTENTIAL IMPACTED POPULATION - 23/02/16

NOTE : Population figures projected to 2015 using age distribution from 2007 Population and Housing Census then prorated to match total projected population



	0-30km	30-40km	40-50km	50-100km
Total	208070	50662	88996	496281
Male	106875	26530	45481	250770
Female	101195	24132	43515	245511
Children under 18	70218	18691	31244	169737
Children under 5	20887	5642	9685	51174
Children under 1	2103	565	975	5153
Pregnant and lactating mothers	4550	1108	1946	10854

NOTE: EAs which were split by a buffer zone have their populations apportioned to each buffer

Map produced by Phil Bright (philb@spc.int), Statistics for Development Division, SPC, 23-02-16

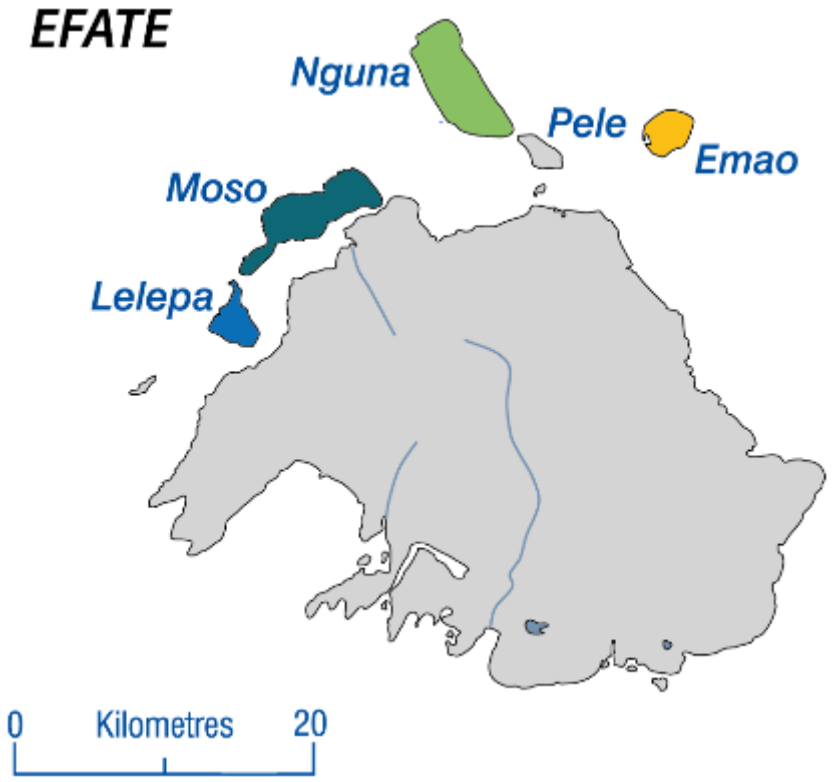
Using maps in statistics

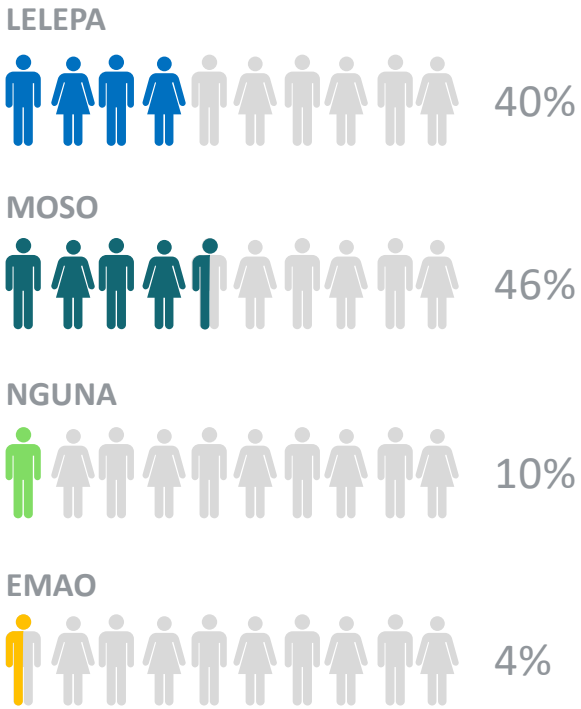
Geographic information is an integral part of all statistical data.

- Spatial relationship between geographic area on the ground (boundaries, names, gps code …) and related statistical information is particularly **important for census data**.
- When carefully designed, maps can help people identify and highlight distributions and patterns that might not be apparent from tables and charts.
- In our visual era, maps are a powerful information medium. **They serve as valuable decision-making tools for experts, politicians and the general public, and meet a growing demand for information in all parts of society.**

BAD EXAMPLE:

Efate surrounded islands population map (% of total islands population)



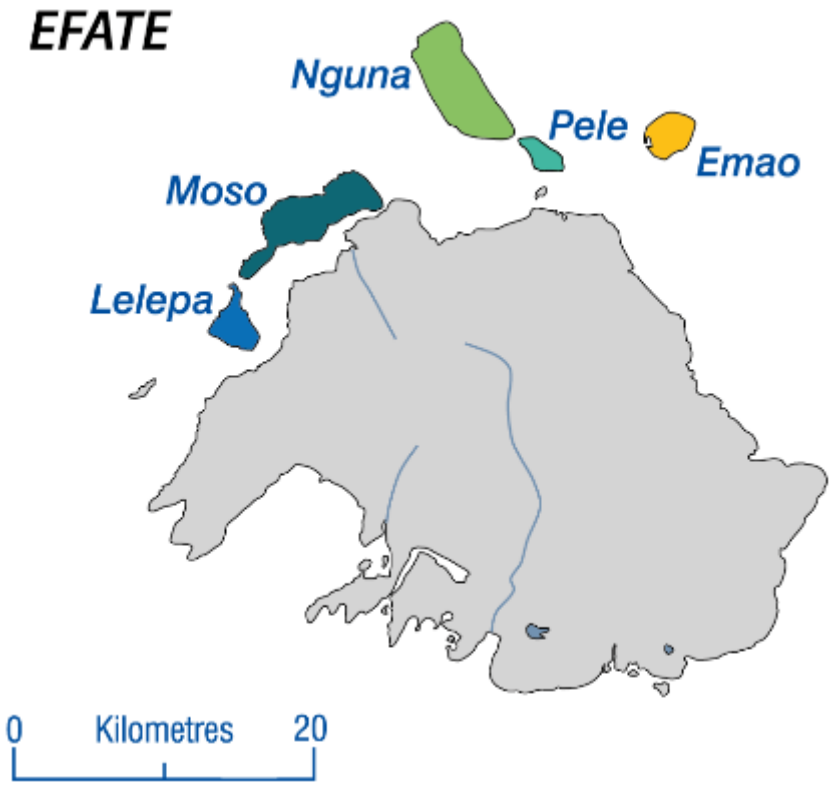


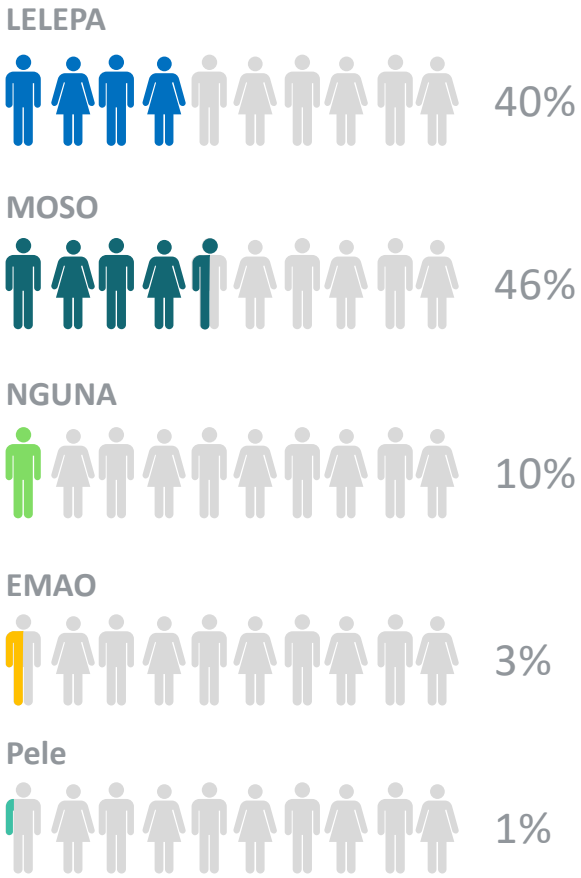
848
Male

1,262
Female

GOOD EXAMPLE:

Efate outer islands population and gender profile





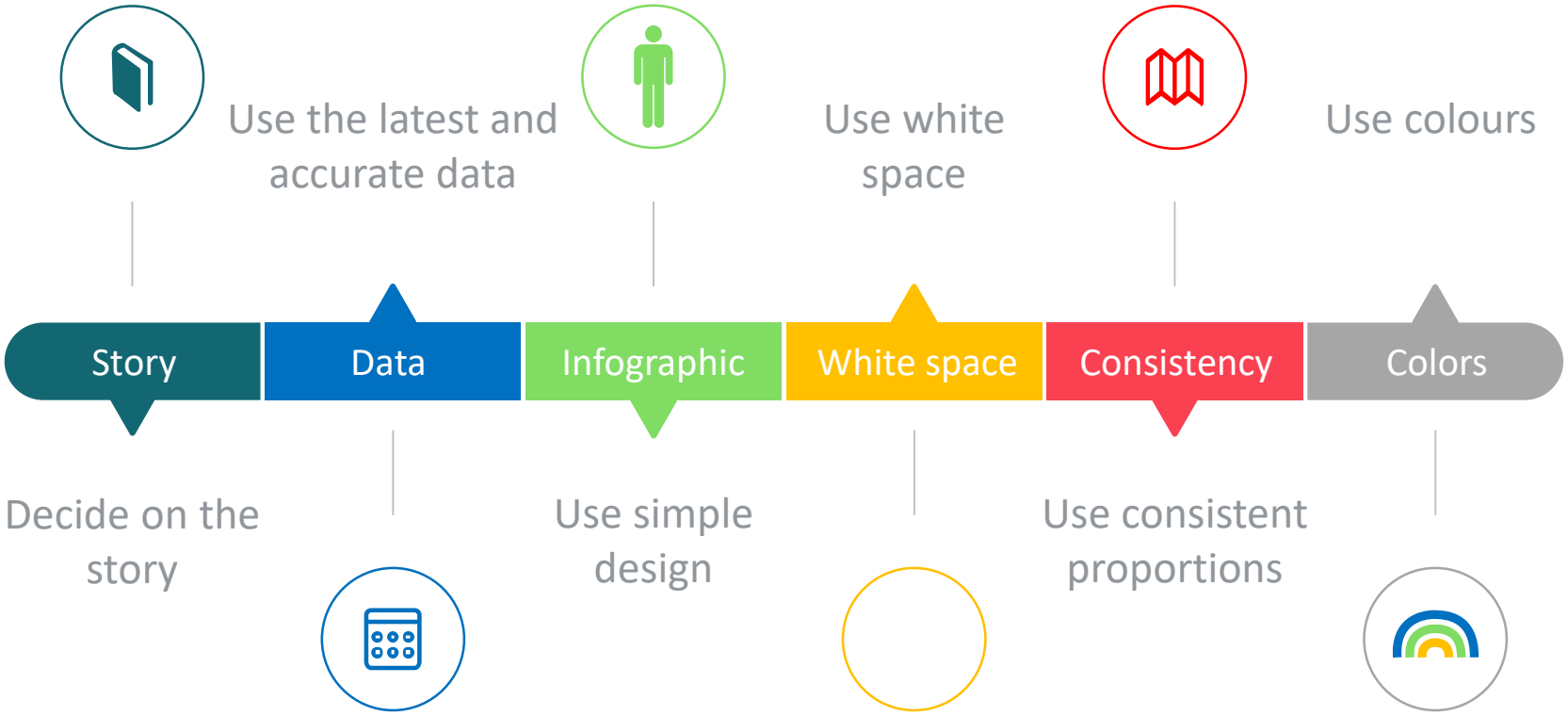
Infographics

Tips for a good infographic

You need to:

- decide on the message/story first;
- use the latest and most accurate data; make sure the time line is as close as possible;
- use simple design;
- use minimal text: don’t be afraid of the white space;
- use consistent proportions; and
- use attractive and representative colours.

Tips for a good infographic



Basics of data presentation

Before representing data you have to think of the message you want to transmit and the way you want it to appear: the text, a chart or an icon… therefore the colors and the fonts are also very important.

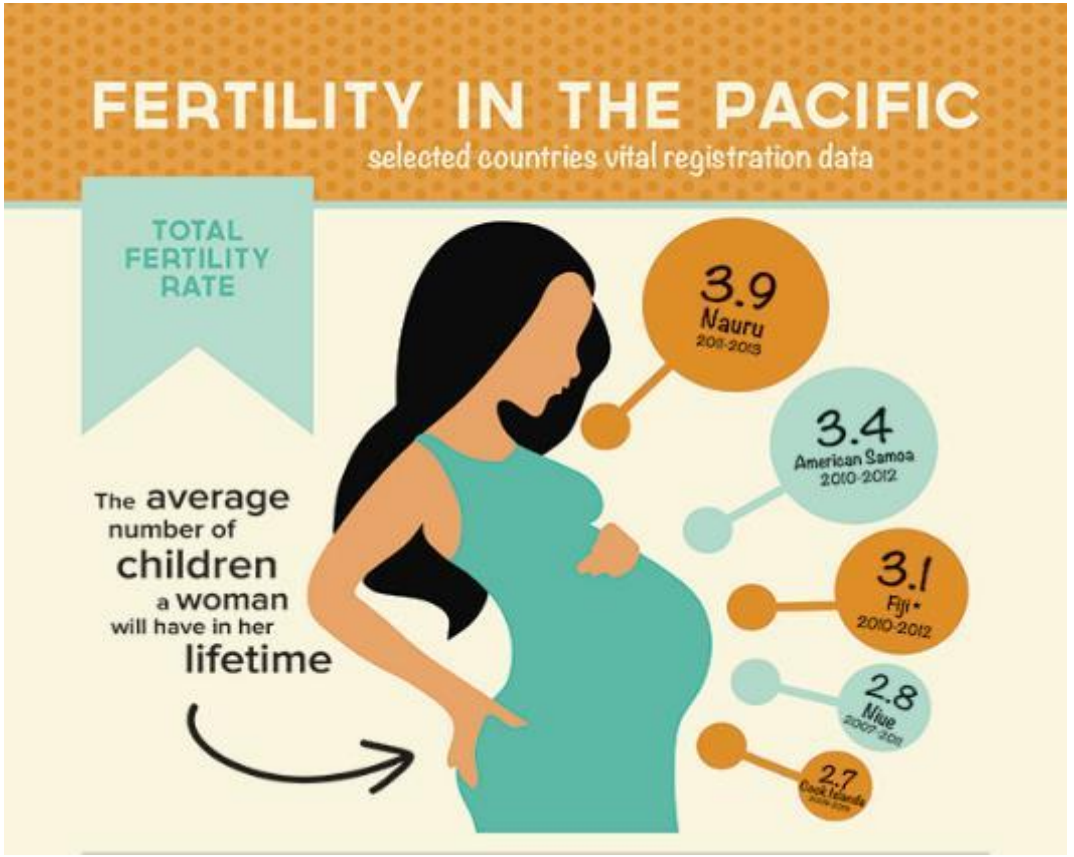
53%

of the youth population (15 to 24 years old) is not attending school

Source: FSM Household Income & Expenditure Survey 2013/2014 Education Fact Sheet

Visualisation

A picture is still worth a thousand words; one of the best technics for understanding data is to visualise numbers as a picture.

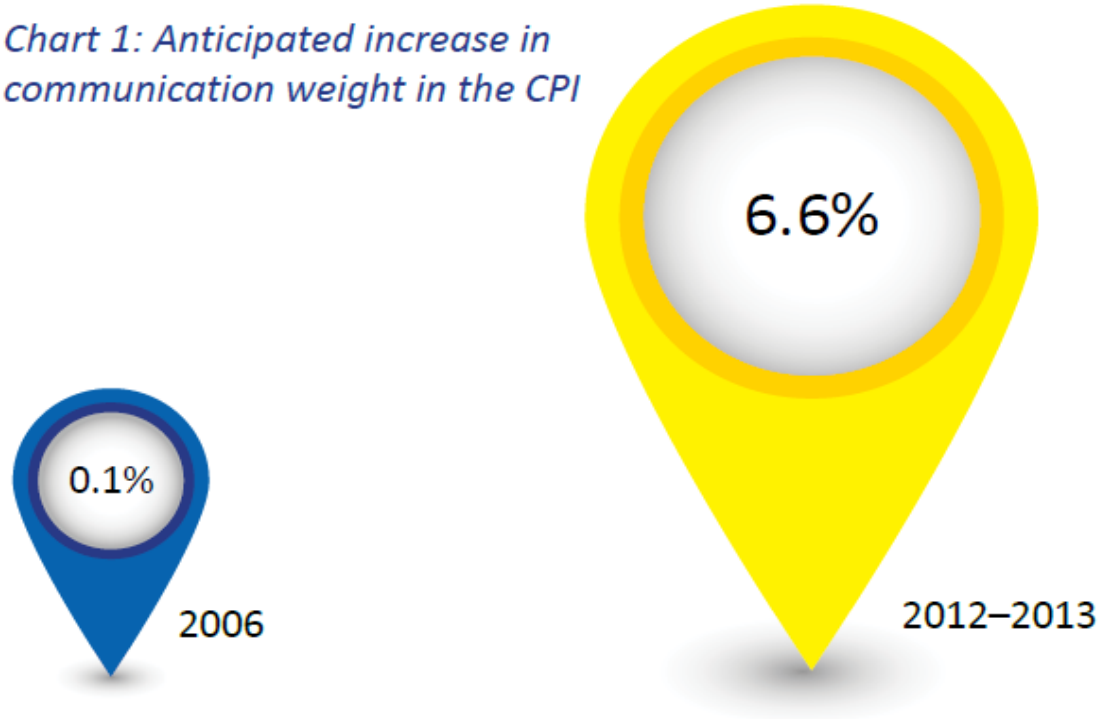


Source: Based on vital registration system data, Pacific Health Information Network and SPC

Visualisation

The ‘picture’ can be from a simple chart…

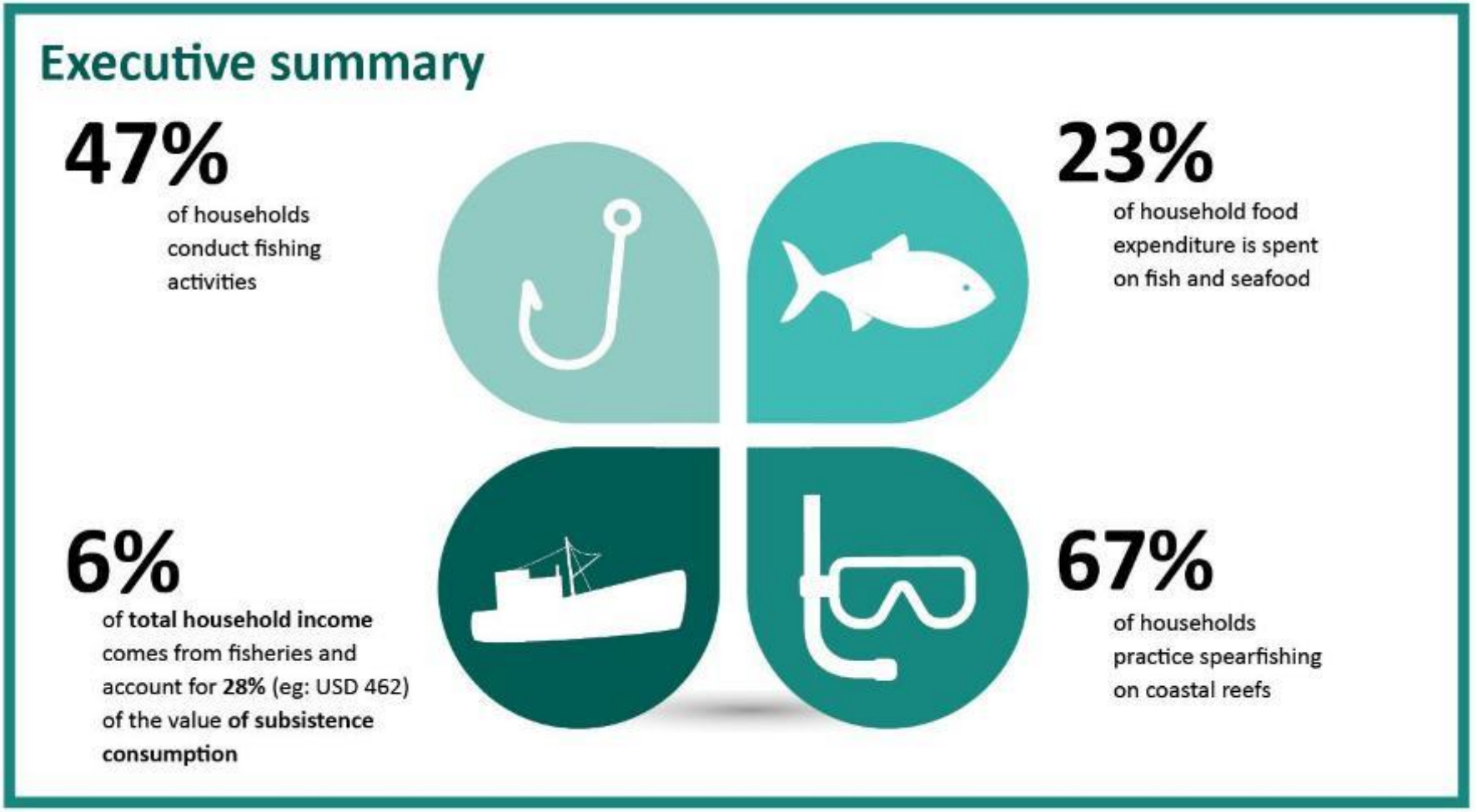
Chart 1: Anticipated increase in communication weight in the CPI



Source: Nauru Household Income & Expenditure Survey 2012/2013 IT & Communication Fact Sheet

Visualisation

…to a more complex design



Source: FSM Household Income & Expenditure Survey 2013/2014 Fishing Fact Sheet

Visualisation

Chart:

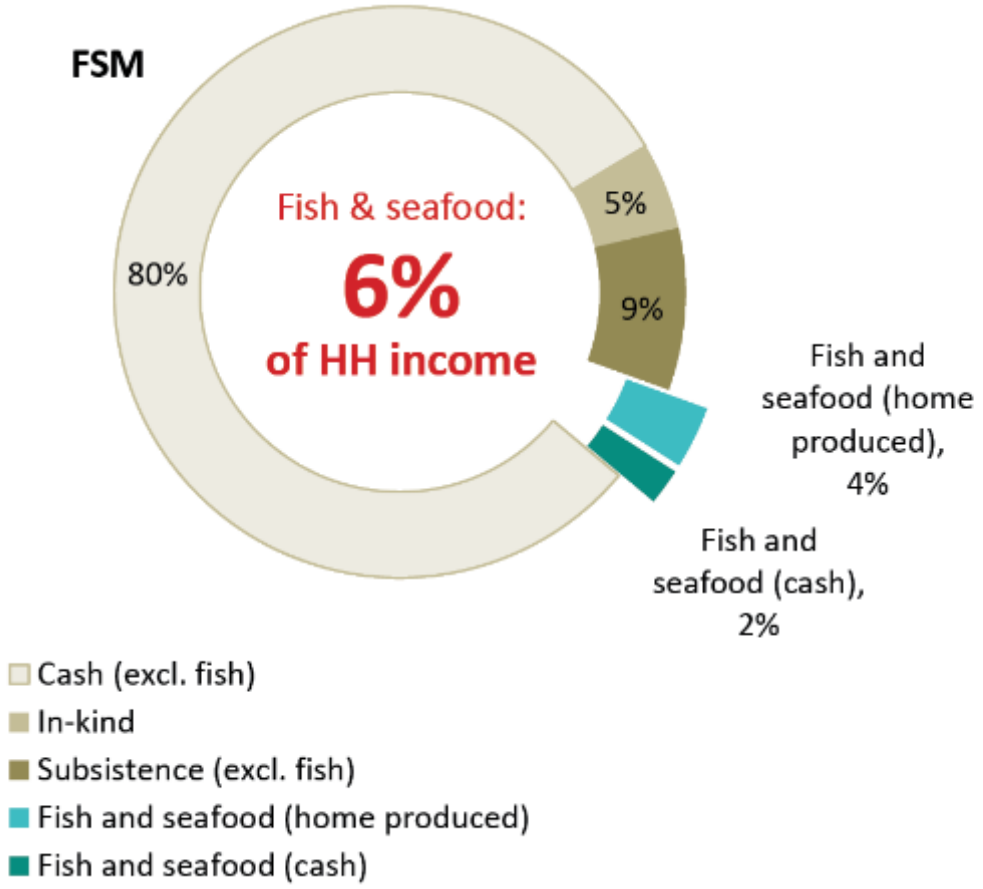
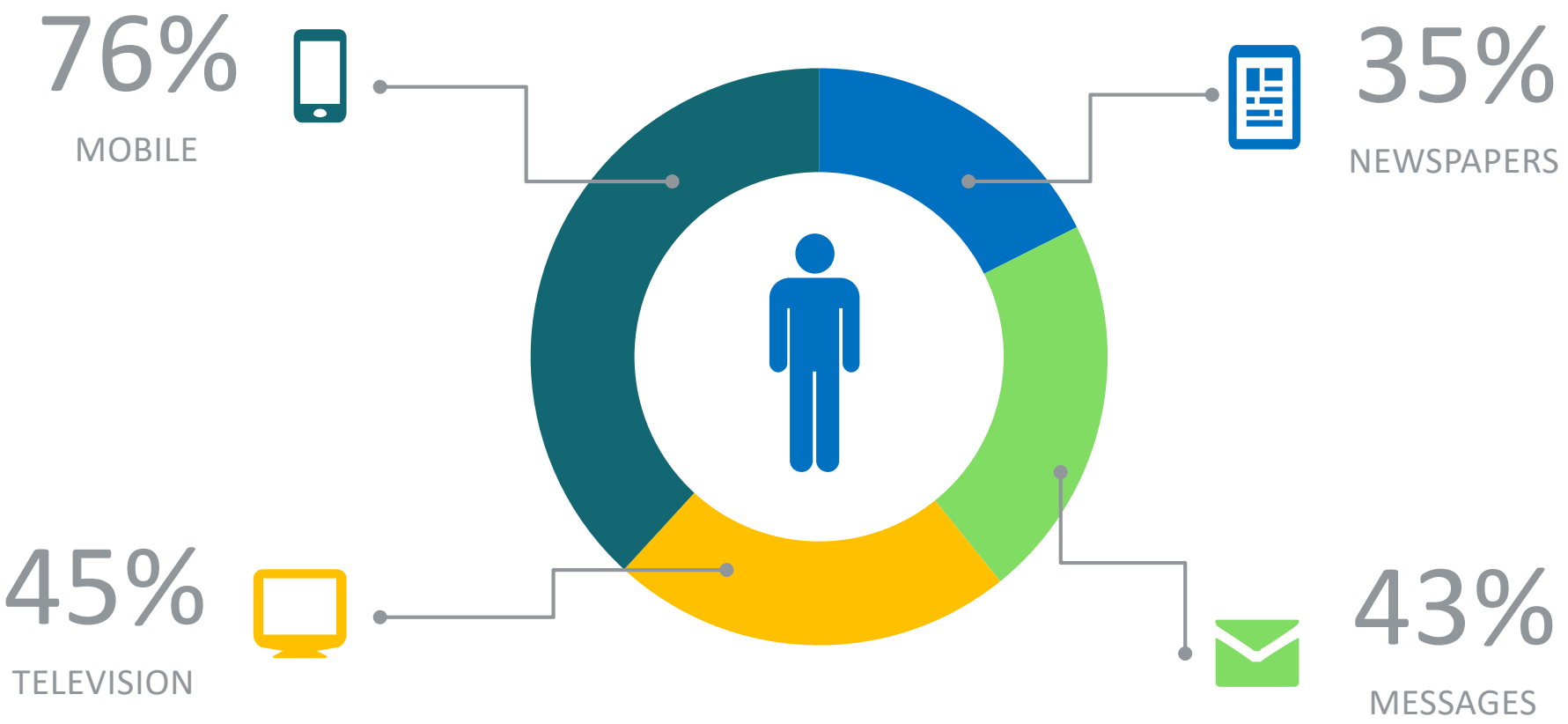


Chart 6: The contribution of fisheries to total HH income (excl. imputed rents) by income type

Source: FSM Household Income & Expenditure Survey 2013/2014 Fishing Fact Sheet

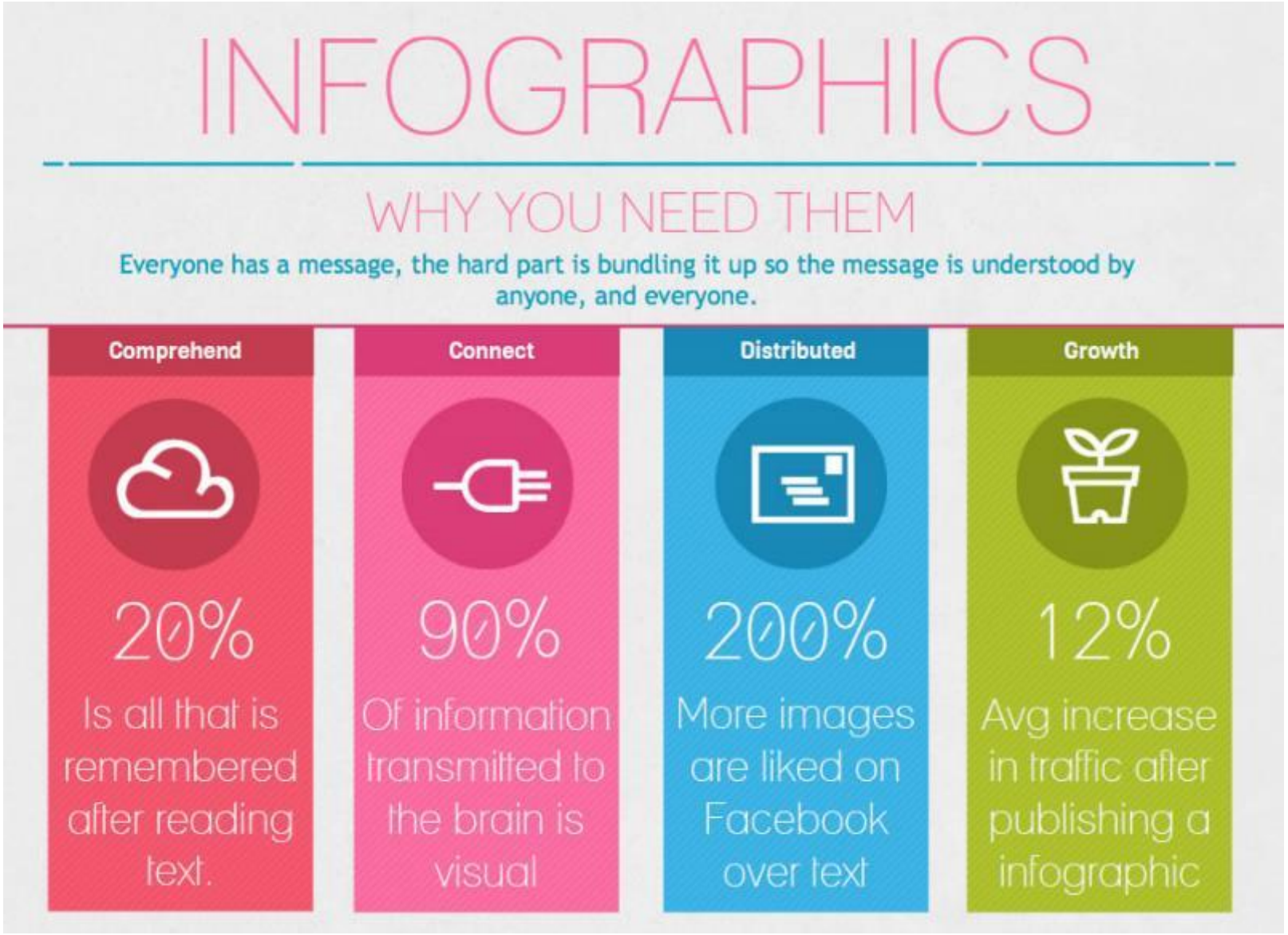
Visualisation

2016 Media consumption targeted by TVL in Port-Vila, Vanuatu



(Source: fake data only use as an example)

Why using an infographic



Report covers

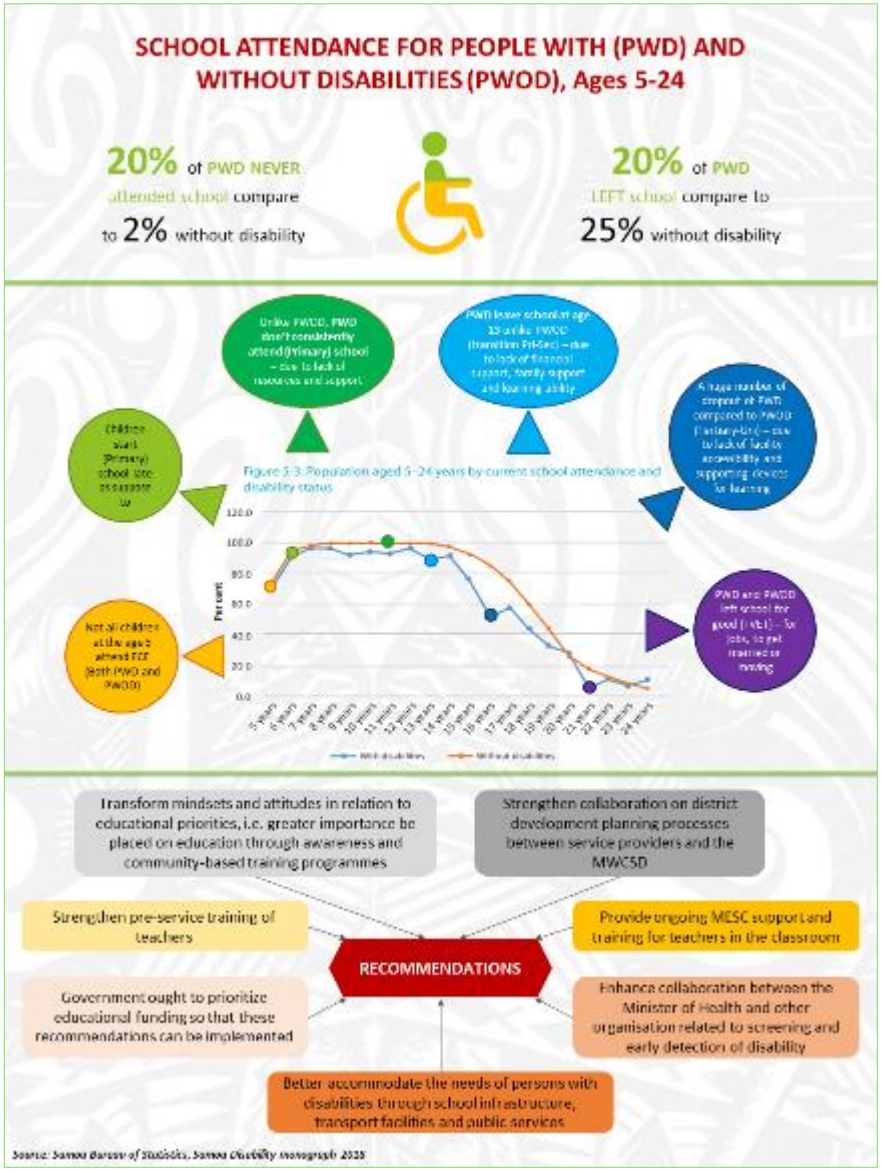
Report covers

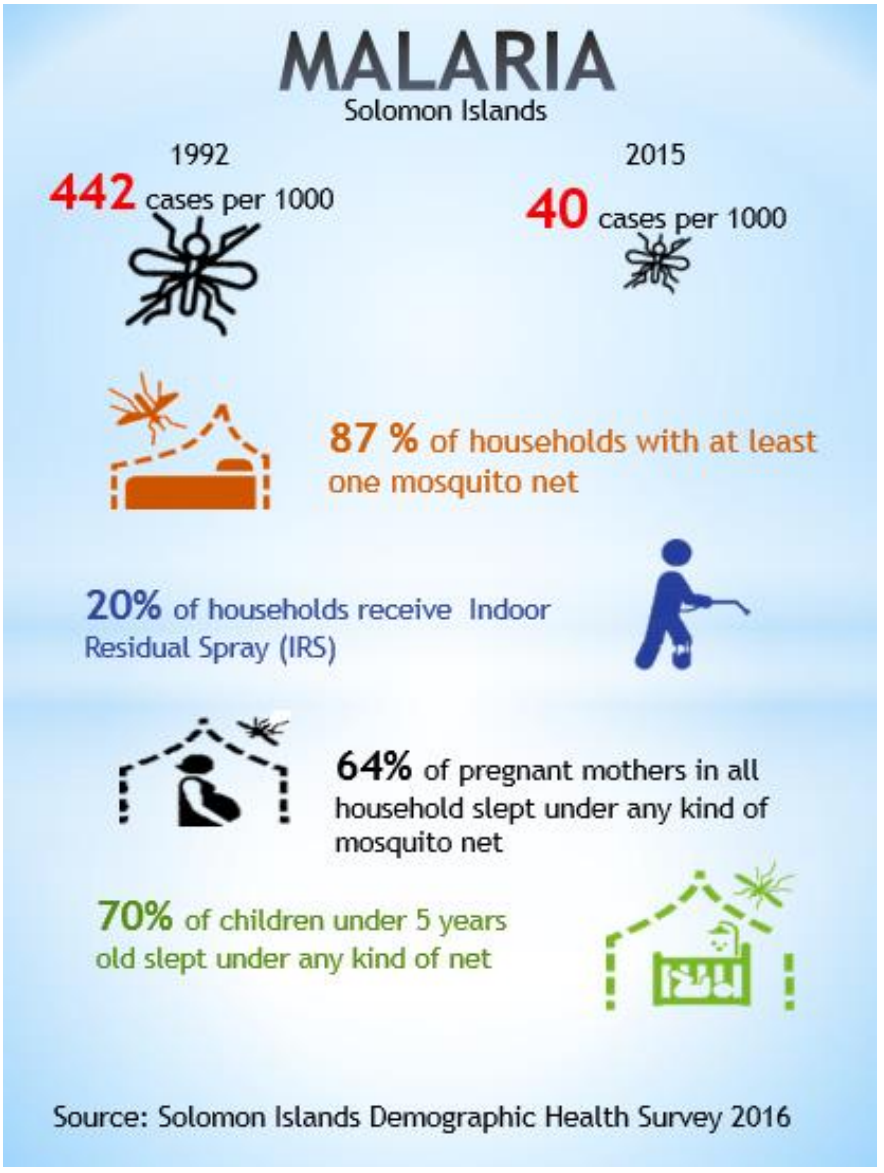
If your release is full of tables that cannot appear in a different way (ex. Business Register Development Guide), then try a nice cover to be more ‘attractive’; that will:

- grab attention; and
- stand out from a pile of comment reports.

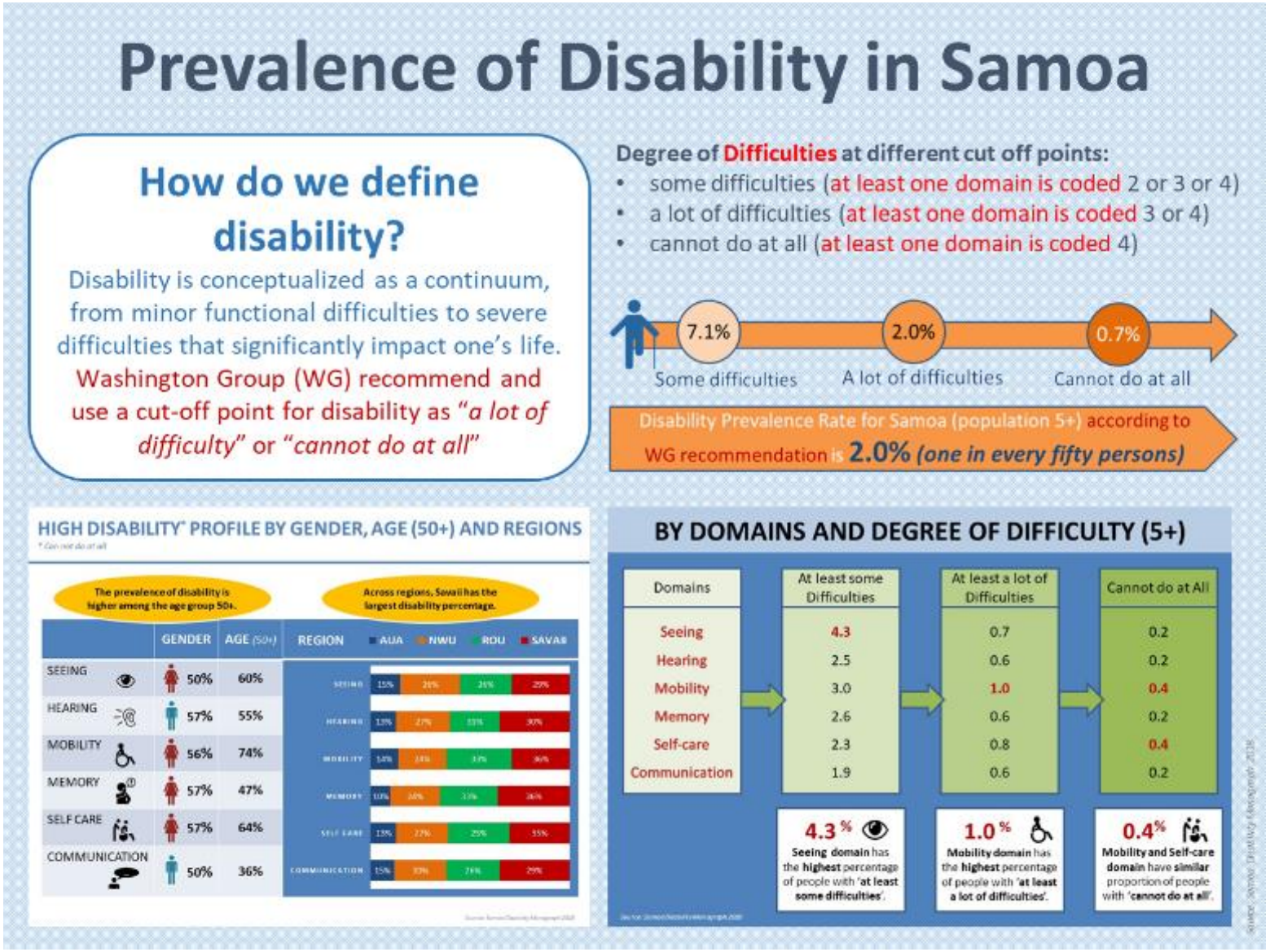
Report covers

Posters and icons

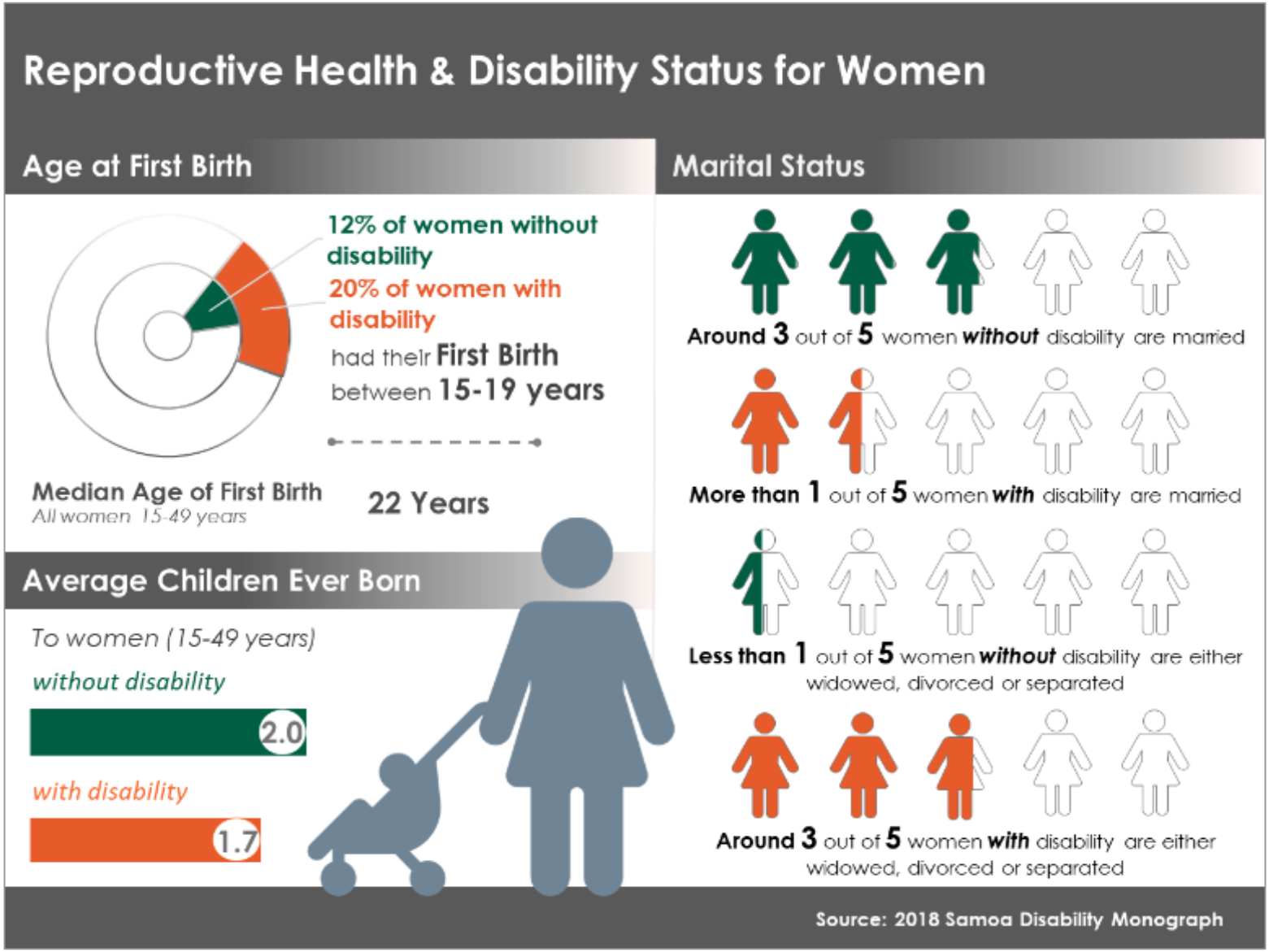




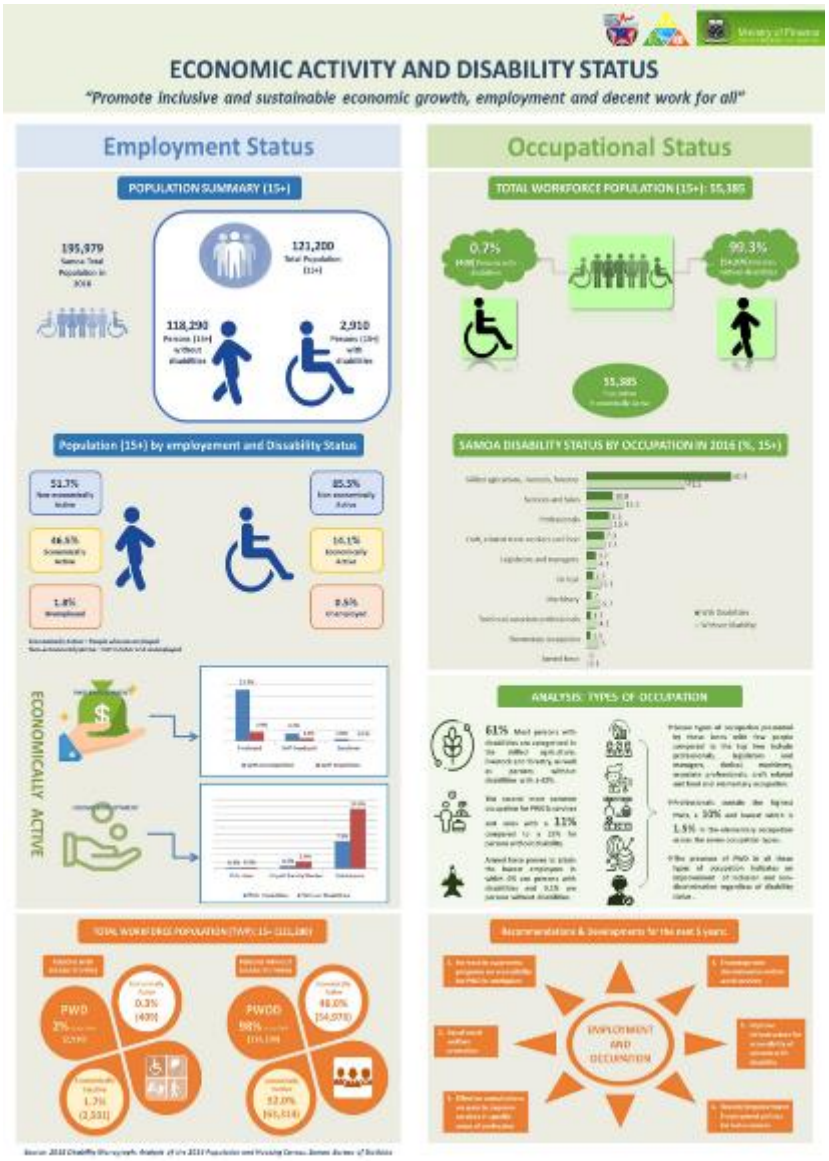
Posters

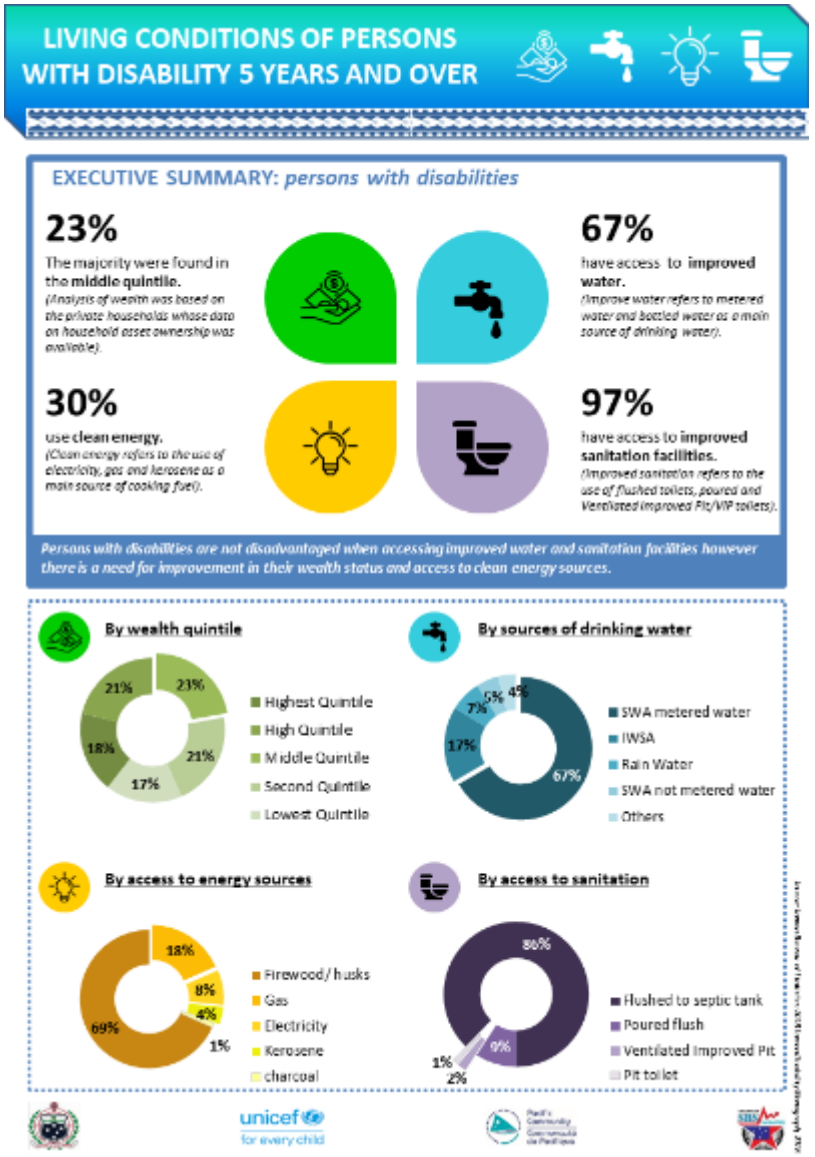

Prevalence of Disability in Samoa
How do we define disability?
Disability is conceptualized as a continuum, from minor functional difficulties to severe difficulties that significantly impact one's life.
Washington Group (WG) recommend and use a cut-off point for disability as "a lot of difficulty" or "cannot do at all"
Degree of Difficulties at different cut off points:
• some difficulties (at least one domain is coded 2 or 3 or 4)
• a lot of difficulties (at least one domain is coded 3 or 4)
• cannot do at all (at least one domain is coded 4)
7.1%
2.0%
0.7%
Some difficulties
A lot of difficulties
Cannot do at all
Disability Prevalence Rate for Samoa (population 5+) according to WG recommendation is 2.0% (one in every fifty persons)
HIGH DISABILITY* PROFILE BY GENDER, AGE (50+) AND REGIONS
The prevalence of disability is higher among the age group 50+.
Across regions, Savaii has the largest disability percentage.
GENDER
AGE (50+)
REGION
AUA
NWU
RDU
SAVAII
SEEING 50% 60%
HEARING 57% 55%
MOBILITY 56% 74%
MEMORY 57% 47%
SELF CARE 57% 64%
COMMUNICATION 50% 36%
BY DOMAINS AND DEGREE OF DIFFICULTY (5+)
Domains
At least some Difficulties
At least a lot of Difficulties
Cannot do at All
Seeing 4.3 0.7 0.2
Hearing 2.5 0.6 0.2
Mobility 3.0 1.0 0.4
Memory 2.6 0.6 0.2
Self-care 2.3 0.8 0.4
Communication 1.9 0.6 0.2
4.3% Seeing domain has the highest percentage of people with 'at least some difficulties'.
1.0% Mobility domain has the highest percentage of people with 'at least a lot of difficulties'.
0.4% Mobility and Self-care domain have similar proportion of people with 'cannot do at all'.

Posters


Reproductive Health & Disability Status for Women
Age at First Birth
12% of women without disability
20% of women with disability
had their First Birth between 15-19 years
Median Age of First Birth
All women 15-49 years
22 Years
Average Children Ever Born
To women (15-49 years)
without disability
2.0
with disability
1.7
Marital Status
Around 3 out of 5 women without disability are married
More than 1 out of 5 women with disability are married
Less than 1 out of 5 women without disability are either widowed, divorced or separated
Around 3 out of 5 women with disability are either widowed, divorced or separated
Source: 2018 Samoa Disability Monograph

Posters


ECONOMIC ACTIVITY AND DISABILITY STATUS
"Promote inclusive and sustainable economic growth, employment and decent work for all"
Employment Status
Occupational Status
POPULATION SUMMARY (15+)
195,979
121,200
118,290
2,910
Population (15+) by employment and Disability Status
51.7%
85.5%
46.6%
14.1%
1.8%
0.6%
ECONOMICALLY ACTIVE
TOTAL WORKFORCE POPULATION (15+): 55,385
0.7%
99.3%
55,385
SAMOA DISABILITY STATUS BY OCCUPATION IN 2016 (%, 15+)
ANALYSIS: TYPES OF OCCUPATION
61%
11%
1.9%
PWD
2%
0.3%
(409)
PWDD
98%
46.6%
(54,976)
1.7%
(2,331)
52.0%
(61,514)
Recommendations & Developments for the next 5 years:
EMPLOYMENT AND OCCUPATION


LIVING CONDITIONS OF PERSONS WITH DISABILITY 5 YEARS AND OVER
EXECUTIVE SUMMARY: persons with disabilities
23%
The majority were found in the middle quintile.
(Analysis of wealth was based on the private households whose data on household asset ownership was available).
67%
have access to improved water.
(Improve water refers to metered water and bottled water as a main source of drinking water).
30%
use clean energy.
(Clean energy refers to the use of electricity, gas and kerosene as a main source of cooking fuel).
97%
have access to improved sanitation facilities.
(Improved sanitation refers to the use of flushed toilets, poured and Ventilated Improved Pit/VIP toilets).
Persons with disabilities are not disadvantaged when accessing improved water and sanitation facilities however there is a need for improvement in their wealth status and access to clean energy sources.
By wealth quintile
21%
23%
18%
21%
17%
Highest Quintile
High Quintile
Middle Quintile
Second Quintile
Lowest Quintile
By sources of drinking water
7%
5%
4%
17%
67%
SWA metered water
IWSA
Rain Water
SWA not metered water
Others
By access to energy sources
18%
8%
4%
69%
1%
Firewood/ husks
Gas
Electricity
Kerosene
charcoal
By access to sanitation
86%
9%
1%
2%
Flushed to septic tank
Poured flush
Ventilated Improved Pit
Pit toilet
unicef
for every child

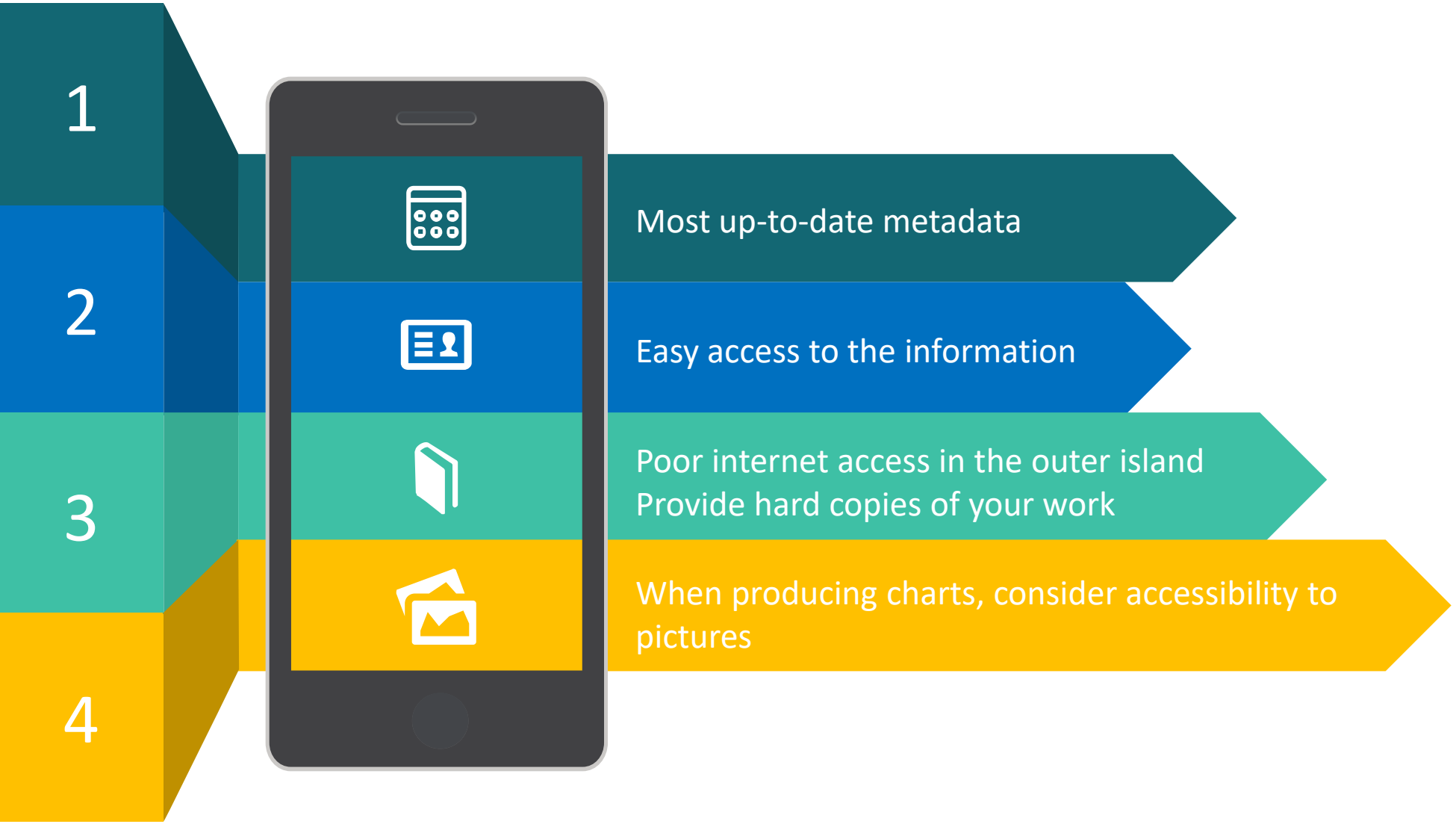
Accessibility issues

Accessibility issues in the pacific

Statistics offices must ensure that users are provided with the most up-to-date metadata as possible.

- Everyone must be able to consult and understand the information, regardless of the technology they use or any disabilities they may have.
- Keep in mind that internet access in the outer island is really bad/ sometimes non existent. Therefore when possible provide the NSOs or else with hard copies of your work.
- When producing charts, it is worth considering that **not all users have access to pictures**.

Accessibility issues in the pacific



Conclusion

Goals and objectives

1. Define your target audience
2. Determine the message you want to communicate
3. Determine the nature of your data
4. **Keep it as simple as possible and accessible to the maximum of people!**

SHARE / DISSEMINATE YOUR WORK

THANK YOU

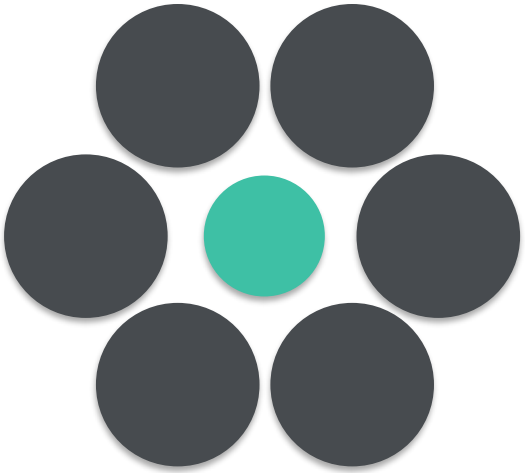
See You Next Time

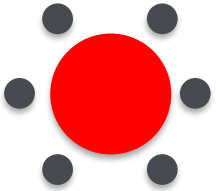
sdd@spc.int

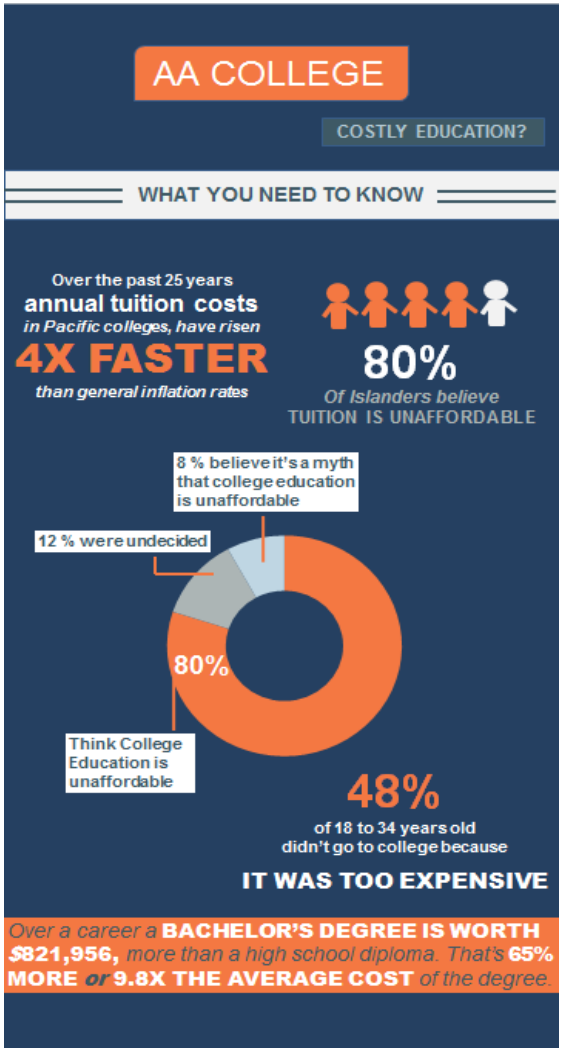
https://twitter.com/prismstats
https://twitter.com/Pacific_CRVS

Spc.int/sdd

Look at these two images. Which color circle is larger?





Coffee break
WE WILL BE BACK IN 30 MINUTES

Exercise: create an infographic poster