

## **SUMMARY OF DAY 2**

Population Estimates &  
Projections for Tonga Workshop

# INFORMATION NEEDS FOR PROJECTIONS

## National population projections specs

2022-base (published July 2022)

Example

| <b>Dimension</b>           | <b>Inputs</b>                            | <b>Published outputs (if different)</b>      |
|----------------------------|--|--|
| <b>Concept</b>             | <b>Resident</b>                          |  |
| <b>Granularity</b>         | <b>Sex by single-year of age (0-115)</b> | <b>Sex by single-year of age (0-94, 95+)</b> |
| <b>Periodicity</b>         | <b>Annual</b>                            |  |
| <b>Frequency of update</b> | <b>Updated every 2-3 years</b>           |  |
| <b>Timeliness</b>          | <b>6 weeks after reference date</b>      |  |
| <b>Horizon</b>             | <b>120 years (2142)</b>                  | <b>51 years (2073)</b>                       |

# BASIC POPULATION EQUATION

$$P_{t+1} = P_t + \underbrace{B - D}_{\text{Natural increase}} + \underbrace{I - O}_{\text{Net migration}}$$

$P_{t+1}$  Population at end of time period

$P_t$  Population at start of time period (base population)

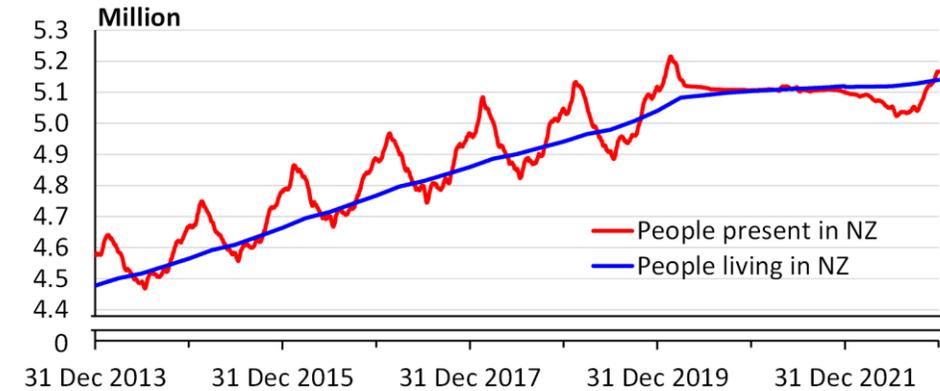
B Births during time period

D Deaths during time period

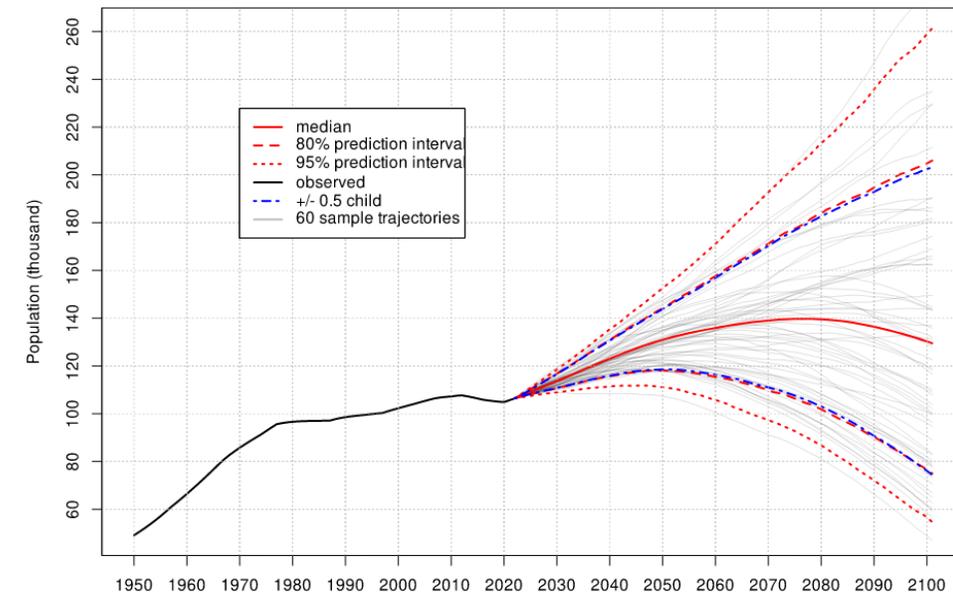
I In-migration (arrivals) during time period

O Out-migration (departures) during time period

Estimated New Zealand populations by day



Tonga: Total Population



# CASE STUDIES - COMPARISON

|                                   | Stats NZ   | Cook Is Statistics Office                       | SPC-SDD       |
|-----------------------------------|--|---|---------------|
| <b>Population estimates</b>       | Yes  | Yes   | No            |
| <b>Population projections</b>     | Yes  | No  | Yes           |
| <b>Concept(s)</b>                 | Residents (de jure)  | Residents (de jure)<br>+ All present (de facto) | Residents     |
| <b>Estimates: Periodicity</b>     | Quarterly, Annual, 5-yearly                                  | Quarterly                                       | n/a           |
| <b>Estimates: Level of detail</b> | National, Subnational,<br>Subpopulations – e.g. <i>Māori</i> | National  | n/a           |
| <b>Projections: Periodicity</b>   | Annual   | n/a   | Annual        |
| <b>Projections: Horizon</b>       | 120 years<br>(51 years published)                            | n/a   | 30 – 35 years |

# KEY TAKEAWAYS

- ❖ Wide range of approaches
- ❖ What's best for NZ, Cook Is, SPC-SDD, UN...
  - ...isn't necessarily what's best for Tonga
- ❖ Key questions: Who is a resident? A visitor? A migrant?
- ❖ KISS = Keep it simple and sustainable – *particularly as you take next steps*
- ❖ Start with what you have and can do now
  - => improve and expand on this over time
- ❖ Consider what output options – reports, tables, online etc. – including rounding
- ❖ Also important to plan for and invest in promoting results and their use

