

## Imputing missing data

The FDRS is ambitious and wide reaching. Although the data quality and reporting are improving each year, data is missing for some National Societies. As a result, some data fluctuations may be misleading: trend lines can drop for a given year when there is missing data, and some National Societies are excluded from the total and then appear again in another year.

In order to better represent the network and better count everyone, FDRS implement every year data imputation techniques. This year, the approach chosen and described in this subsection was to replace the 2019 and 2020 missing data as well as to apply two different techniques according to the indicator categories, in the previous years all NSs reported their data then no input technique was employed. The imputing applies only to main indicators and does not apply to disaggregated levels to maintain consistency across years. This approach is described in more detail here.

For every combination of one National Society and one main indicator of FDRS sections NS Governance & Structure and NS Finance & Partnerships:

If a value is missing for a year between 2019 and 2020, but there is at least one non-missing value in a later or an earlier year from 2018, replace the missing value:

- Looking at the years before this one, propagate last non-missing observation forward to next observation.
- If all the values for every year between 2019 and 2020 are missing, ignore this National Society for this indicator.

For every combination of one National Society and one main indicator of FDRS section NS Reach:

If a value is missing for a year between 2019 and 2020, but there is at least one non-missing value in a later or an earlier year from 2018, replace the missing value:

- Looking at the years before this one, returns the mean of the non-missing values among these previous years.
- If all the values for every year between 2019 and 2020 are missing, ignore this National Society for this indicator.

Example: Indicator for number of local units, Nolandia National Society:	2018	2019	2020
Local units	150	Missing	Missing

Missing values are replaced like this	2018	2019	2020
Local units	150	150	150

Example: Indicator for number of people reached by WASH activities, Nolandia National Society	2018	2019	2020
People Reached by WASH activities	200,000	500,000	Missing

Missing value is replaced like this	2018	2019	2020
People Reached by WASH activities	200,000	500,000	350,000