Creating detailed demographic breakdowns in InaSAFE

"Using attributes stored in the aggregation layer, we can create detailed age, gender and vulnerability based breakdowns."

The people living in a community have different needs based on their age, gender and vulnerability (e.g. being disabled). In InaSAFE you can use the 'Field Mapping Tool' to produce detailed breakdowns of the number of people in each vulnerability class. This is done either by defining **ratios** in the keywords of an **aggregation** layer, or by defining counts in the keywords of a vector **population** layer.

You try:

Goal: To be able to define demographic ratios on an aggregation layer.

• Using the **wards** layer in either the Tandale or Bhutan (data set for exercise 2.2) sample dataset, update the keywords to set the ratios as listed in the requirements image below.

• Now run the flood on population analysis again using the wards layer for aggregation.

*Remember that in a real-world scenario you should consult your national statistics agency for real data!

Check your results:
Review the report generated and look for the demographic breakdowns per ward. Why might some values be zero?

Infant Ratio	Child Ratio	Youth Ratio	Adult Ratio	Elderly Ratio
○ Do not report	○ Do not report	○ Do not report	○ Do not report	○ Do not report
○ Global default 9.3 %	○ Global default 17.3 %	○ Global default 26.6 %	○ Global default 65.7 %	○ Global default 7.7 %
◉ Custom 5.0 %	◉ Custom 15.0 %	◉ Custom 40.0 %	◉ Custom 30.0 %	◉ Custom 10.0 %
○ Ratio fields	○ Ratio fields	○ Ratio fields	○ Ratio fields	○ Ratio fields

"Infant" is defined as: A very young child or baby aged between 0 and 4 years. In cases where population data is available, InaSAFE will calculate the number of infants per exposure feature, aggregate hazard area, aggregation area and for the analysis area as a whole. The infant count is calculated based on standard ratios either provided as a global setting in InaSAFE, or (if available) ratios in the input analysis data.

"Child" is defined as: A young person aged between 5 and 14 years, usually below the age of puberty. In cases where population data is available, InaSAFE will calculate the number of child per exposure feature, aggregate hazard area, aggregation area and for the analysis area as a whole. The child count is calculated based on standard ratios either provided as a global setting in InaSAFE, or (if available) ratios in the input analysis data.

"Youth" is defined as: A person aged between 0 and 14 years. In cases where population data is available, InaSAFE will calculate the number of youths per exposure feature, aggregate hazard area, aggregation area and for the analysis area as a whole. The youth count is calculated based on standard ratios either provided as a global setting in InaSAFE, or (if available) ratios in the input analysis data.

"Adult" is defined as: Person aged between 15 and 64 years, usually of working age. In cases where population data is available, InaSAFE will calculate the number of adults per exposure feature, aggregate hazard area, aggregation area and for the analysis area as a whole. The adult count is calculated based on standard ratios either provided as a global setting in InaSAFE, or (if available) ratios in the input analysis data.

"Elderly" is defined as: Persons aged 65 years and over. In cases where population data is available, InaSAFE will calculate the number of adults per exposure feature, aggregate hazard area, aggregation area and for the analysis area as a whole. The elderly count is calculated based on standard ratios either provided as a global setting in InaSAFE, or (if available) ratios in the input analysis data.
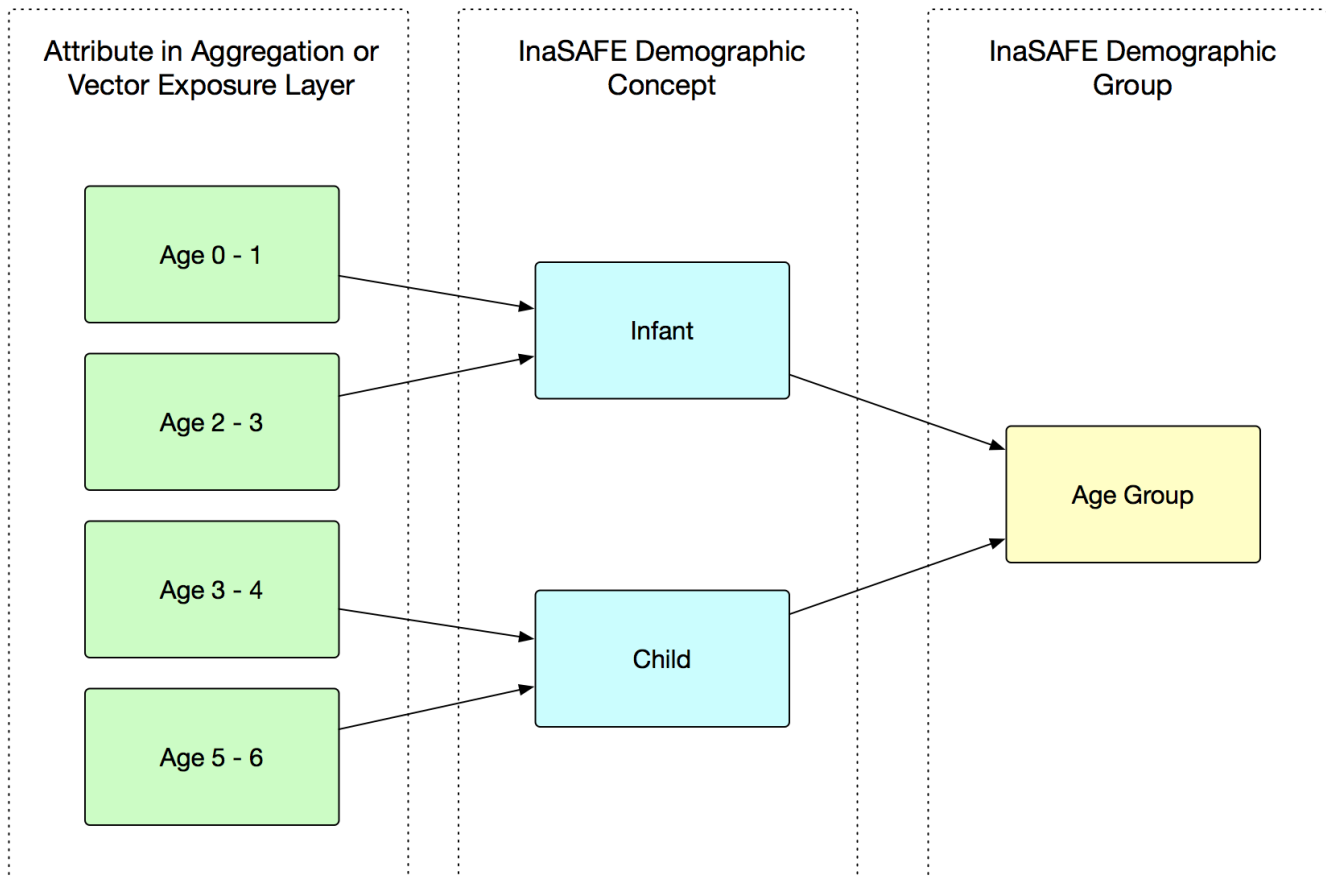
ℹ️ More about

Demographic breakdowns are useful to produce a more detailed report. For example if you have a very large hazard affecting millions of people, it might be hard to know how to plan for such an event in terms of providing minimum needs, logistics etc. By breaking the numbers down into different population segments, more specific contingency planning can be done – for example by planning to cater for pregnant women who might be affected.

We want to caution you again against simply making up the numbers used in your demographic breakdowns. InaSAFE provides some defaults but even these we recommend that you evaluate critically to see whether they are suitable for your community.

The field mapping system provided by the field mapping tool also allows you to dynamically combine one or more attribute columns in your dataset containing ratio data into a single ratio value, as illustrated in the diagram here.

InaSAFE uses a system to decide whether to use global defaults, specific values, data contained in the aggregation layer attribute table or to not use a given ratio.

Please see the field mapping tool section in the manual for more information on how this works.

![Diagram showing mapping between Attribute in Aggregation or Vector Exposure Layer, InaSAFE Demographic Concept, and InaSAFE Demographic Group]

Attribute in Aggregation or Vector Exposure Layer

- Age 0 - 1
- Age 2 - 3
- Age 3 - 4
- Age 5 - 6

InaSAFE Demographic Concept

- Infant
- Child

InaSAFE Demographic Group

- Age Group

✅ **Check your knowledge:**

1. InaSAFE can produce detailed demographic breakdown reports using ratios:
   a. true
   b. false

2. Mark all the correct statements:
   a. InaSAFE provides default demographic ratios suitable for all countries
   b. InaSAFE provides a way to combine multiple attributes into a single ratio
   c. The ratio data can only come from global defaults or a user specified value

📋 **Further reading:**

- See this video on YouTube walking through the value mapping tool: https://youtu.be/-d6R67hrmSc
- See the field mapping tool section in the InaSAFE technical documentation at: http://manual.inasafe.org/en/index.html#field-mapping-tool

Download the sample data for the lesson from http://changelog.inasafe.org/media/images/lesson/worksheet/external_data/64b0403b60c0f92648ab4d21ce05b5c4575fd936.zip.