Section : . Introduction to InaSAFE

Module : . Exposure

Exposure in InaSAFE

"In the context of InaSAFE, exposure refers to people, infrastructure or land areas that may be affected by a disaster."

Currently InaSAFE supports several kinds of exposure data including: population / people, roads, buildings, places and land-cover. Exposure datasets need to comply with these modes and geometries:

Exposure Modes	Exposure Geometries	
a) Continuous data	c) Vector points	e) Vector polygons
b) Classifed data	d) Vector lines	f) Single band rasters

You try:

Goal: To be able to identify suitable data for use in InaSAFE

Complete the table below by indicating one example exposure type for each geometry type and mode. The first entry has been completed for you as an example.

Check your results:
Swap your list with the person next to you and see if they had any different ideas about which constitute valid exposure data.

Name	Expectation
Continuous data	Vector polygons with an attribute for population count
Classifed data	
Vector points	
Vector lines	

Vector Polygons	
Single band rasters	

More about

In many ways exposure data are easier to map and to obtain than hazard data. OpenStreetMap (OSM), for example, contains a massive archive of global roads and building footprints. You should be aware however that these data are **often incomplete** (e.g. not every building has been digitised yet in OSM) or modelled estimates (e.g. raster population data). InaSAFE will always convert raster datasets (i.e. population data) to vector polygon data for the analysis. Currently the only supported raster exposure dataset is population data.

Categorical vector data will need to be 'value mapped' into standard categories in InaSAFE. For example if you have building data you will need to indicate which types of buildings are present in the dataset according to InaSAFE's built in categories that are based on OSM and include, "Residential", "Health" and "Evacuation Centre".

Similarly for roads, you will need to indicate how the roads types in your data map to standard InaSAFE concepts such as 'Highway', 'Residential Street' etc. In InaSAFE you will need to understand the basic concepts of an exposure dataset so that you can correctly **create metadata** for them. InaSAFE relies on this metadata in order to determine what processing steps need to be carried out during the analysis.

Generally we use a 'fit for purpose' approach in InaSAFE and advise that exposure data do not need to be engineering quality (i.e. accurate to within a few mm). You should however make every effort possible to ensure that the exposure data is qualitatively, temporally and spatial accurate within the limits of what your time and budget allow.

Check your knowledge:

1. Exposure data in InaSAFE can be easily downloaded from OpenStreetMap:
   a. *true*
   b. *false*
2. Mark all the correct statements:
   a. *InaSAFE requires engineering quality exposure data in order to function properly.*
   b. *Exposure data is often easy to obtain from OpenStreetMap.*
   c. *It helps if exposure data is up to date and as complete as possible.*

Further reading:

- See the exposures section in the InaSAFE technical documentation at: http://manual.inasafe.org/en/index.html#exposures