



Section : . Introduction to InaSAFE

Module : . Hazard Classifications



Classification of Hazards in InaSAFE

“Each hazard is subdivided into a number of classes in InaSAFE. This module explores the implications of this concept.”

A hazard classification is used to define a range of severity thresholds (classes) for a hazard layer. The classification will be used to create classes of data that each present a similar hazard level. During the analysis, each exposure feature will be assessed to determine which hazard class it coincides with, and then a determination will be made as to whether and how the exposure feature is likely to be impacted by the hazard. When the class is used in the context of population, it will also determine what the displacement and fatality rates are for people affected by the hazard class.

(Photo by Ny Menghor on Unsplash)



You try:

Goal: To understand the importance of hazard classes

Using the table below, work with your group to assign the properties of each hazard class as listed according to the following:

- **AF:** Will people be **affected** by the hazard? (write N for no, Y for yes)
- **DR:** What is the **displacement rate** for people affected by the hazard?
- **FR:** What is the **fatality rate** for people affected by the hazard?

Threat	Exposure	Class	AF	DR	FR
Flood	Population	High > 1.5m			
Flood	Population	Medium 0.7m - 1.5m			
Flood	Population	Low < 0.7m	N	0%	0%

Check your results:

Swap your list with the person next to you and see if they had any different ideas in their answers.



More about

When you run the InaSAFE keywords wizard for a **hazard** dataset, one of the steps will ask you to indicate which classification to use for each exposure type (see image below). The reason for this is that for the same hazard class, the severity of impact will differ. For example, buildings may be unaffected by 20cm of flood water (depending on the architecture used), whilst roads may be unusable.

Similarly different hazards may result in different level of impact even though ostensibly the classification scheme is the same. For example, if we compare hazards like flood versus tsunami, the water dynamics can result in a flood level of 0.5m having a low displacement rate for people, whereas the force of tsunami waters may result in a much higher displacement at the same depth.

InaSAFE step by step
Keywords update wizard for layer **Floods**

You have selected **Flood Hazard** and attribute **depth**. Please select hazard classifications for each exposure type. If you want to edit the thresholds, you can click edit button next to each and you can edit the threshold in the right panel. Do not forget to save the thresholds before you continue to the next step.

Classifications

Flood on Land cover Classifications Flood classes Edit

Flood on Population Classifications Flood classes Edit

Flood on Roads Classifications Flood classes Edit

Flood on Structures Classifications Flood classes Edit

Status

Thresholds

Flood on Land cover Classifications

Class name	Minimum	Maximum
Use caution	0.0	0.1
Low	0.1	0.7
Medium	0.7	1.5
High	1.5	9999.0



Check your knowledge:

- Hazard classifications provide a way to define per-exposure hazard thresholds:
 - true
 - false
- Mark all the correct statements:
 - Fatality rates are defined for each class in each hazard
 - During the keywords definition process of a hazard, you need to define a classification scheme for each hazard class
 - During the keywords definition process of a hazard, you need to define a classification scheme for each exposure type



Further reading:

- See the hazards section in the InaSAFE technical documentation at: <http://manual.inasafe.org>

