The Warning System of Chilean National Weather Service

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  - How is it works?
  - The present
  - Future perspective
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Introduction

FLOODING

FLOOD OF RIVERS

DROUGHT

TORNADOS

FLASH FLOOD

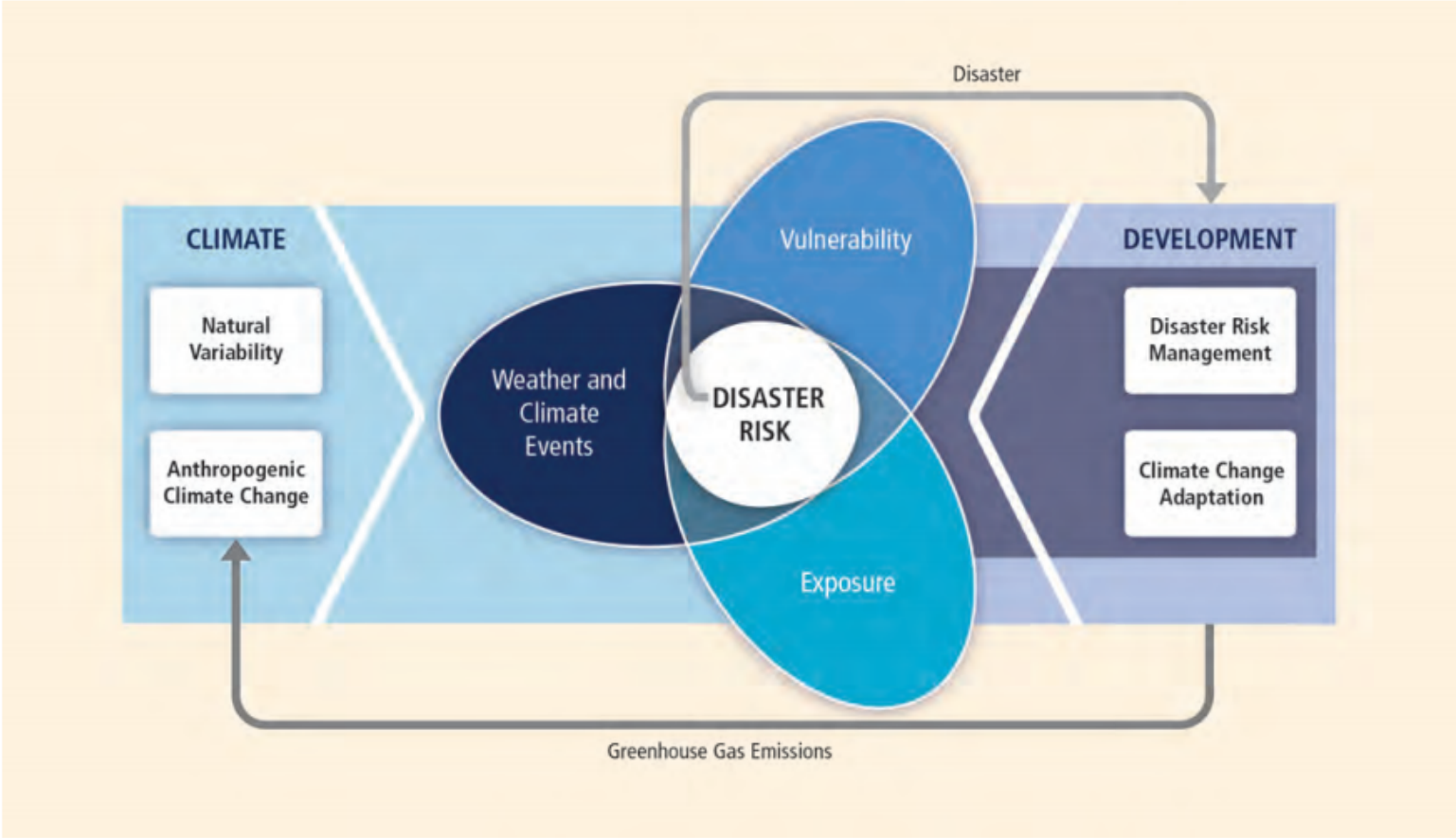


Figure SPM.1 | Illustration of the core concepts of SREX. The report assesses how exposure and vulnerability to weather and climate events determine impacts and the likelihood of disasters (disaster risk). It evaluates the influence of natural climate variability and anthropogenic climate change on climate extremes and other weather and climate events that can contribute to disasters, as well as the exposure and vulnerability of human society and natural ecosystems. It also considers the role of development in trends in exposure and vulnerability, implications for disaster risk, and interactions between disasters and development. The report examines how disaster risk management and adaptation to climate change can reduce exposure and vulnerability to weather and climate events and thus reduce disaster risk, as well as increase resilience to the risks that cannot be eliminated. Other important processes are largely outside the scope of this report, including the influence of development on greenhouse gas emissions and anthropogenic climate change, and the potential for mitigation of anthropogenic climate change. [1.1.2, Figure 1-1]

Fuente: https://wg1.ipcc.ch/srex/downloads/SREX-All_FINAL.pdf

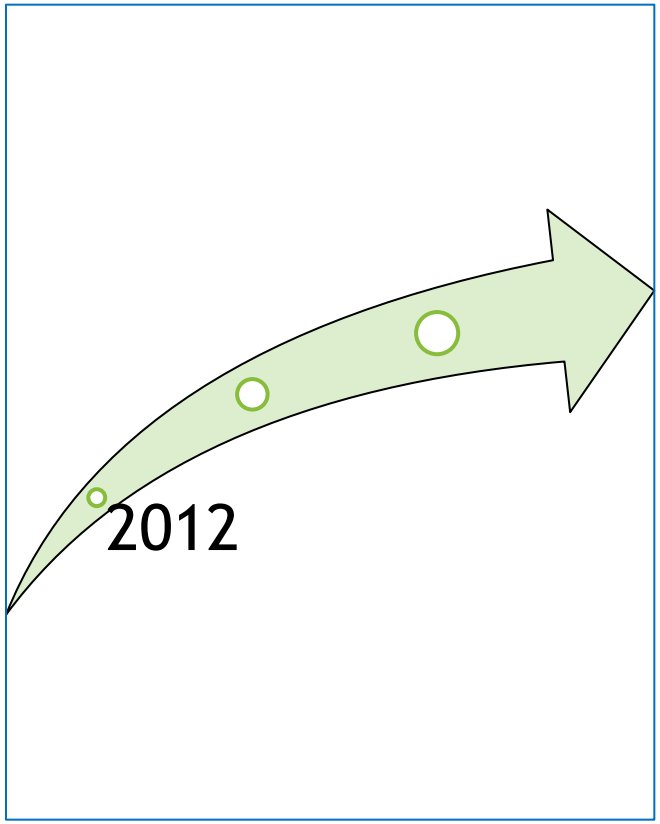
WMO Members commit to prevent the emergence of new disaster risks and reduce problems by applying a series of integrated and inclusive measures that prevent and reduce exposure to hazards and threats to disasters, increase preparedness for response and recovery, and thereby strengthen resilience.

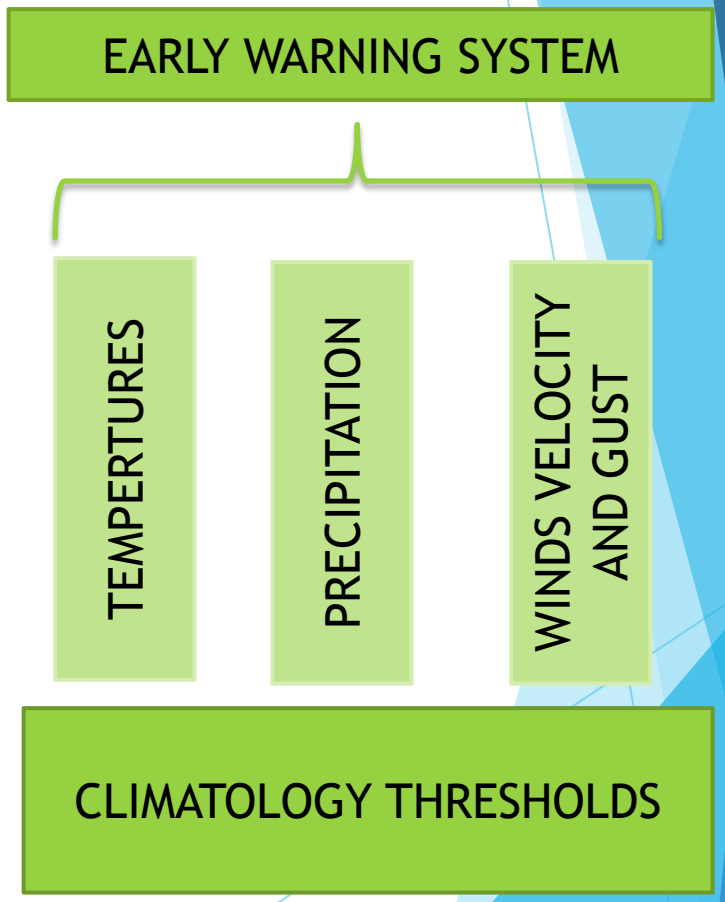
Paris Agreement highlights the need to improve information regarding losses and damages product of disasters, and in particular the risk of disasters of origin natural.

Next September 2019, will be the Sustainable Development Goals (17 goals), where the 13th Goal is about Climate Change

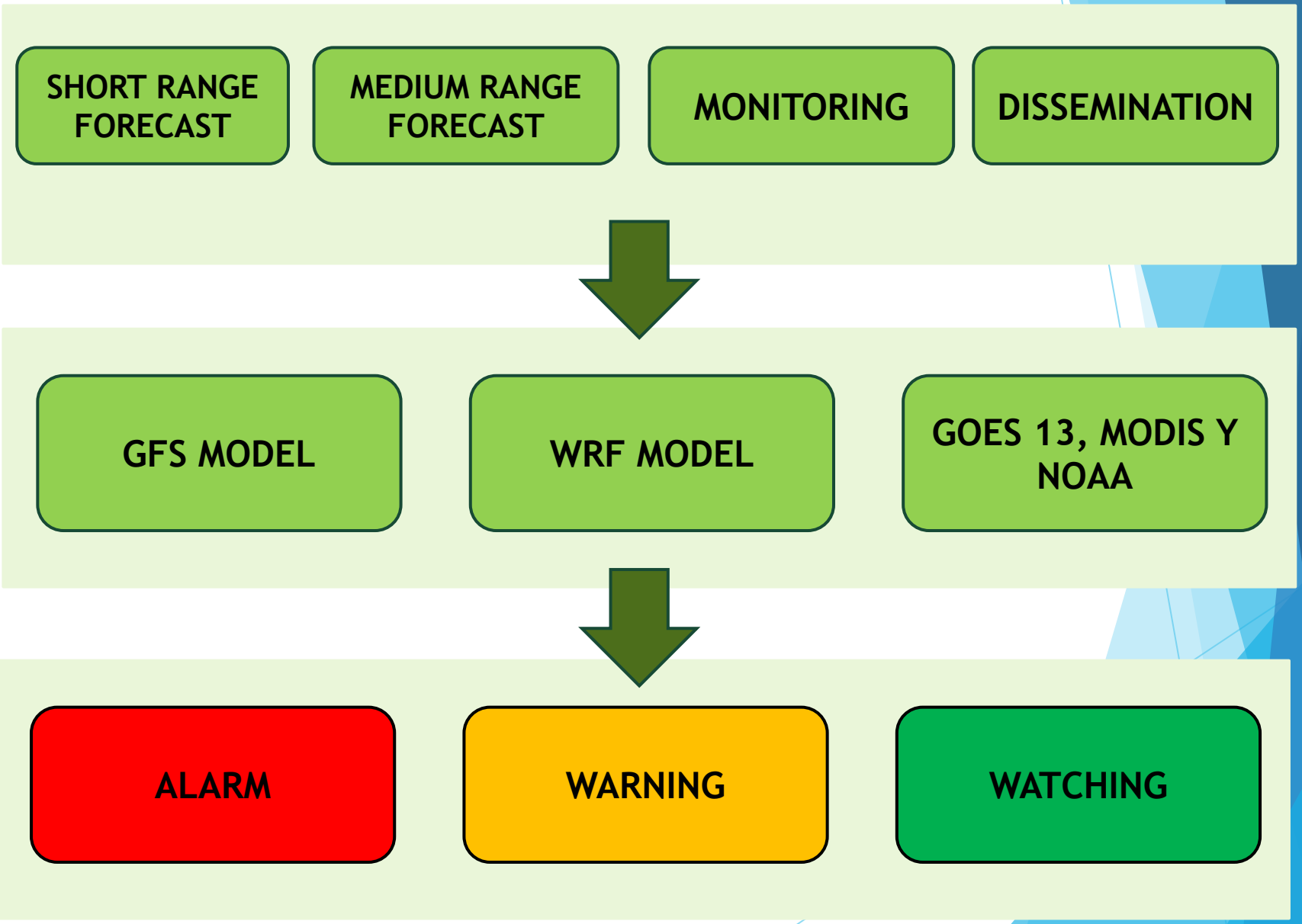
Early Warning System

First Stages





HOW IS IT WORKS?



Meteorological Phenomenos

Cold wave: it is a period of three consecutive days in the winter season, in which the minimum temperatures are equal to or less than 0ºC.

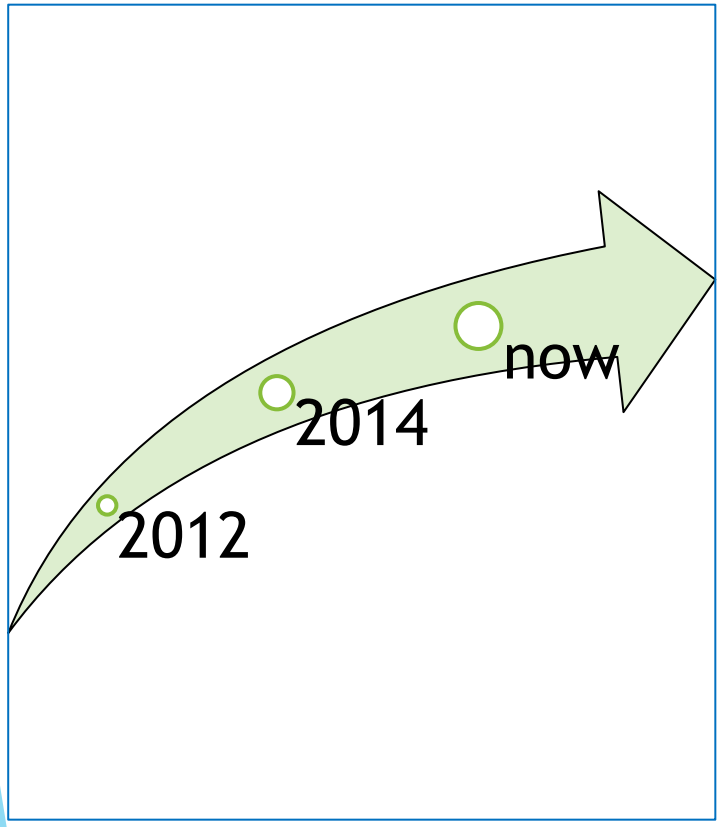
Heat waves and/or extreme temperature event: It is a period of 3 days or more consecutive between the months of November and March of the following year, in which the maximum temperature is equal to or greater than the values defined as heat wave thresholds

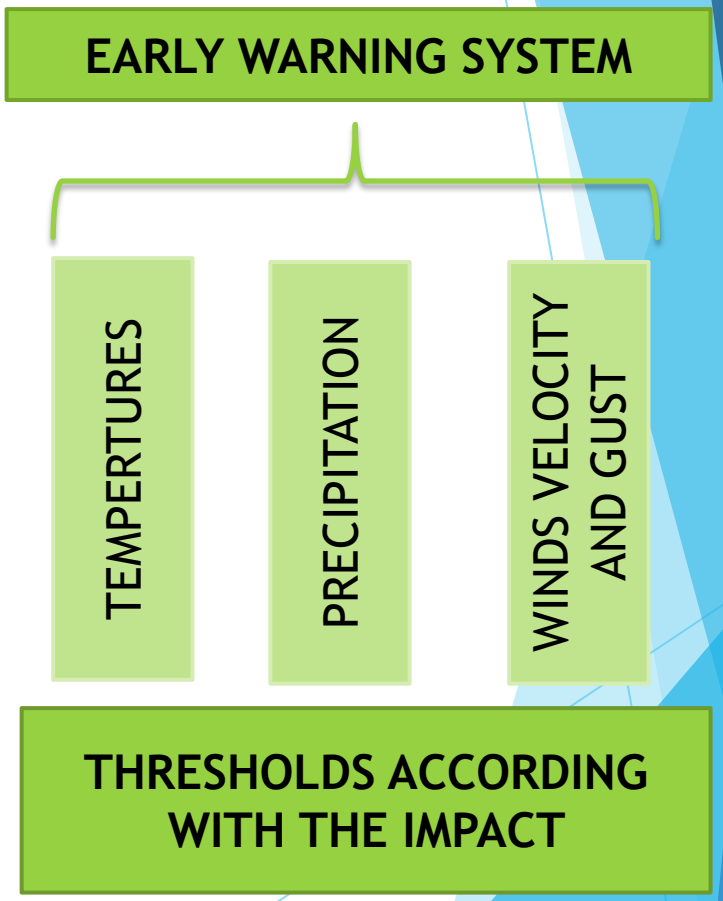
Precipitation: water dropped in liquid or solid state accumulated in a certain period of time in a defined place

Wind of moderate to strong intensity

Storms/Thunderstorm

The present


now
2014
2012


EARLY WARNING SYSTEM
TEMPERTURES
PRECIPITATION
WINDS VELOCITY AND GUST
THRESHOLDS ACCORDING WITH THE IMPACT

Reanalysis

Short Range Forecast

Mediun Range Forecast

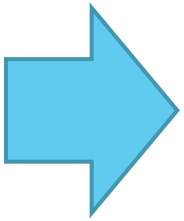
Forecast for Fire Forest Conditions

Satellite

Supervisor

Monitoring

Dissemination



- GFS model
- ECMWF model
- WRF model

- GOES 16
- MODIS
- NOAA
- Amdar data

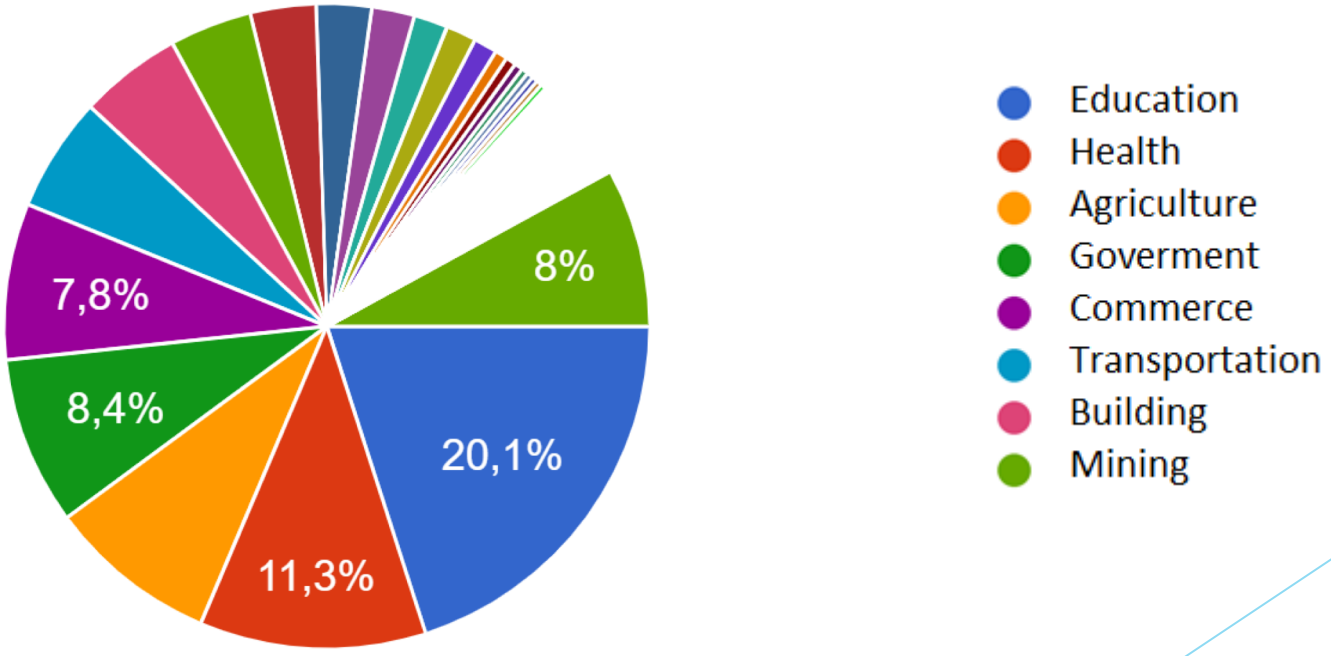
- Thunderstorm detector

Meteorological stations network

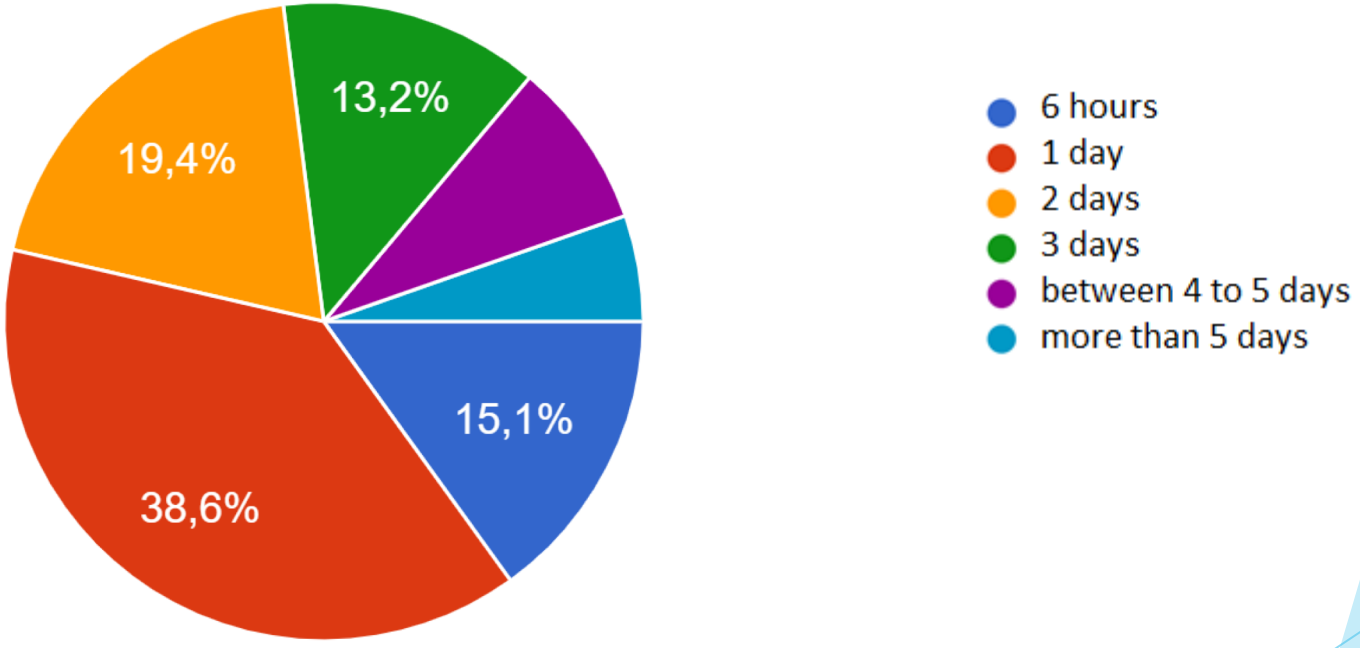
Future perspective

Results from survey

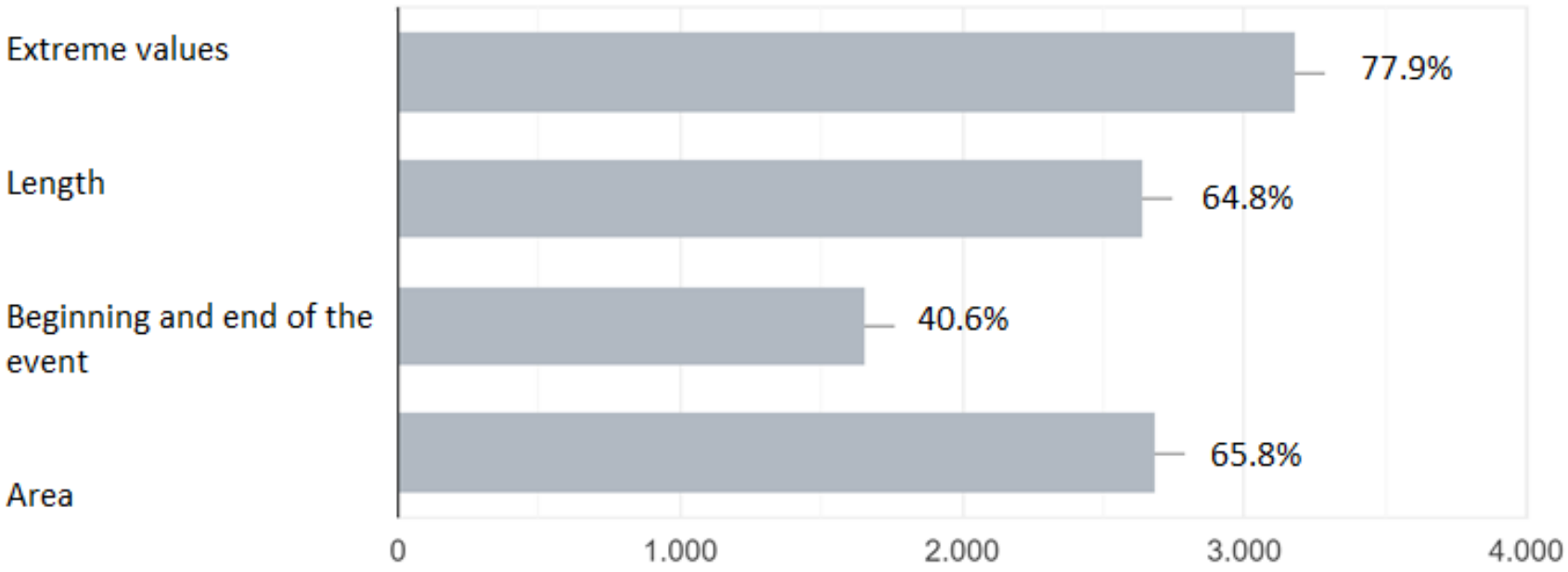
SECTOR



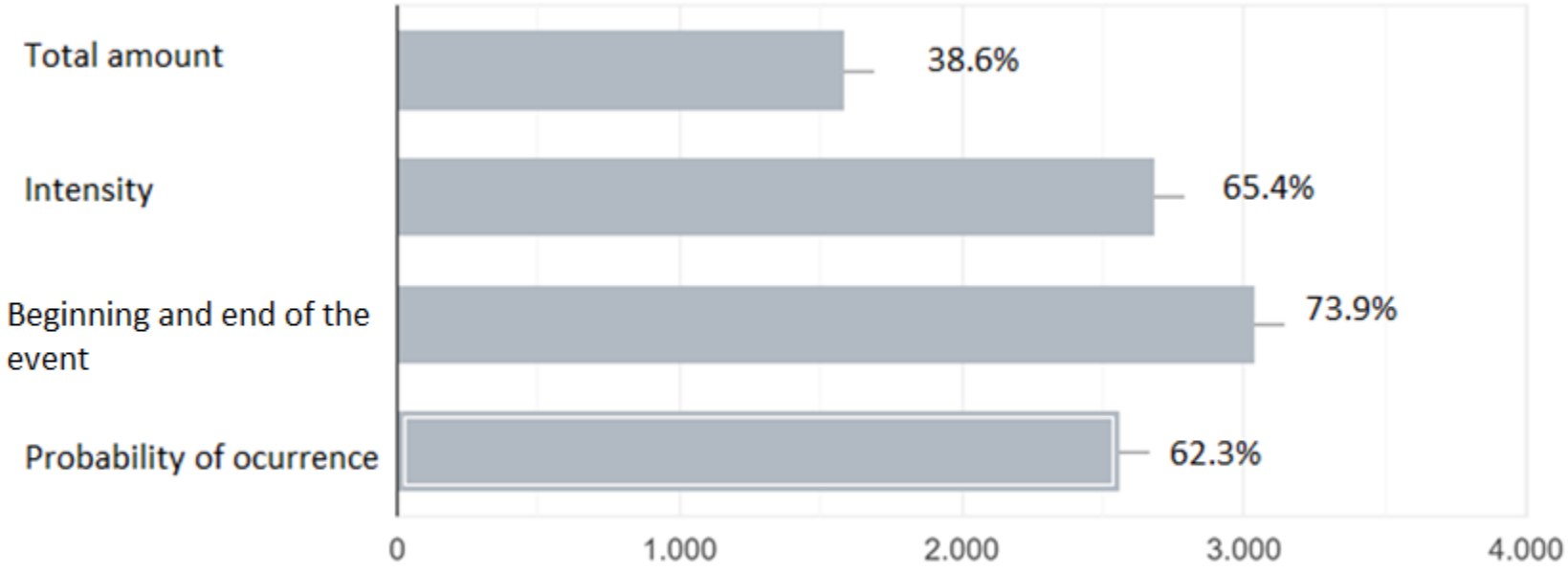
Timing


13,2%
19,4%
15,1%
38,6%
6 hours
1 day
2 days
3 days
between 4 to 5 days
more than 5 days

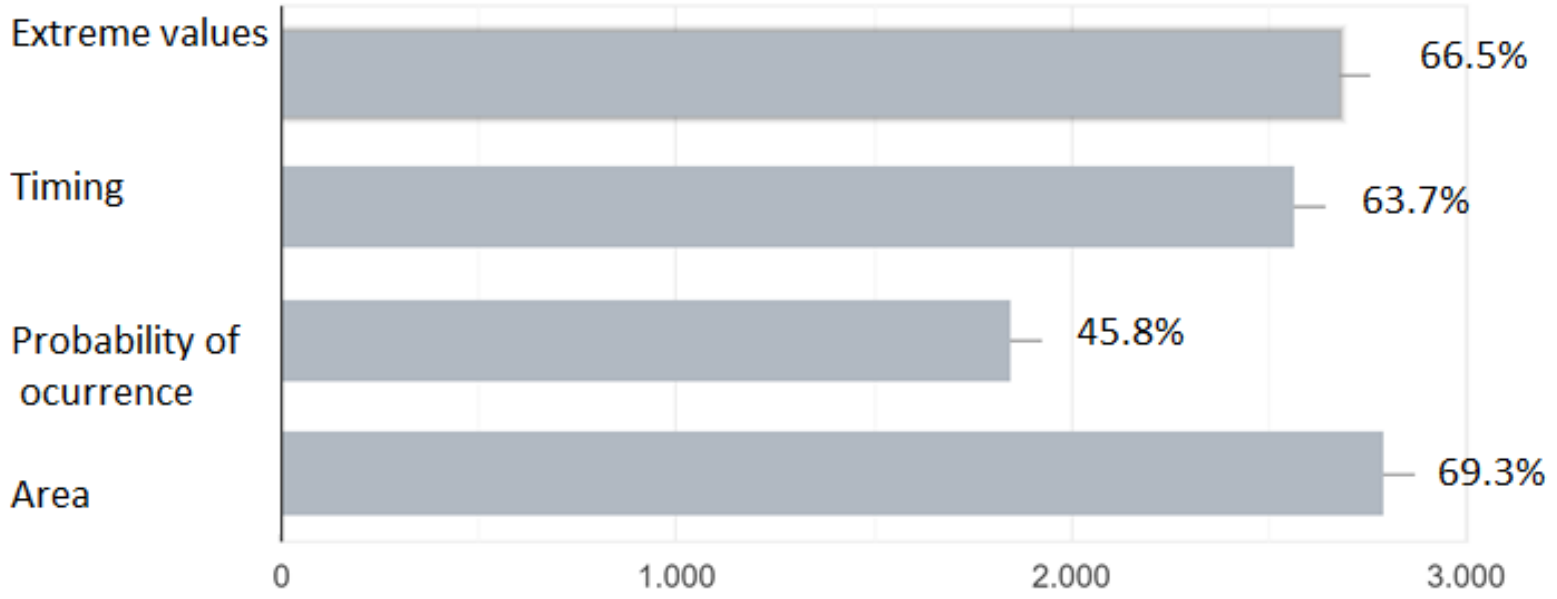
What is important for you if there is a extreme temperature warning?



What is important for you if there is a rain warning?

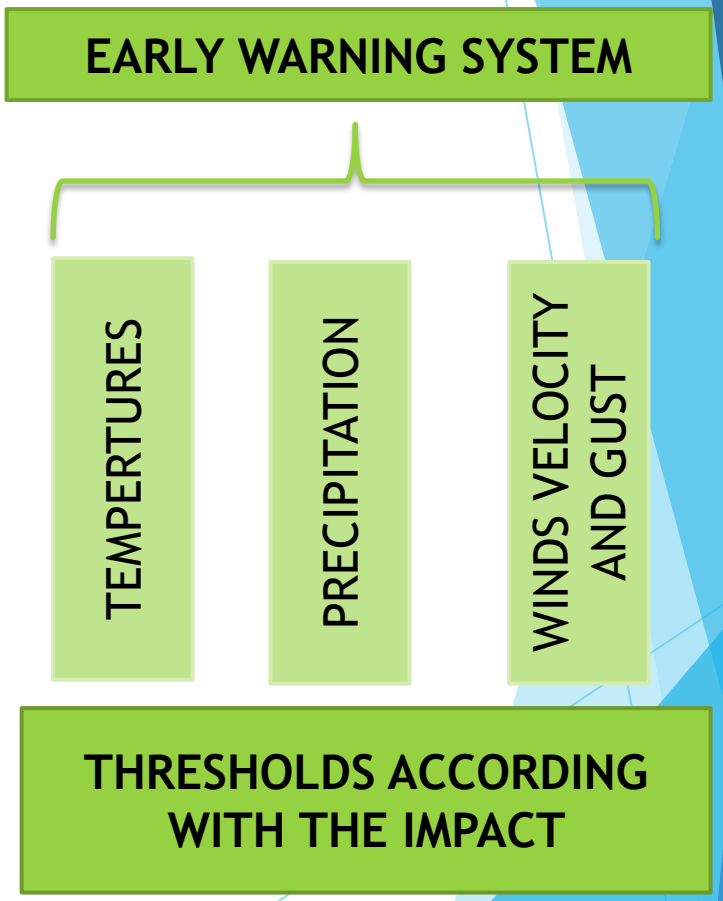


What is important for you if there is a wind warning?



About the warning system

- Dynamic System
- Should change the thresholds according to the extreme events changes
- Add new events as tornados, extreme heat wave, etc



Technology

- Radar System
- Better meteorological stations network
- Nowcasting forcast
- Meteorological models

Information Technology

Human Capacity

- Increase the number of profesionals
- Continuous training
- Create new positions to support the warning system

Concluding Comments

- The Warning System should be dynamic to adapt to the new challenges that climate change presents.

- Nowadays, the life of people and the economy of the country, are the most sensitive elements to extreme meteorological events, so advances in science and technology, seek answers to the growing demand of citizens, so improve the Early warning system is one of the biggest challenges at the country level.

- We have to make sure that the Meteorological Service collaborates closely with citizens and civil protection organization, in order to find new ways to make the meteorological information in time and useful.

THANK YOU