



Confidence and Likelihood in the IPCC *Fifth Assessment Report* FACT SHEET

What does the IPCC mean when they use ‘confidence’ and ‘likelihood’ ?

When the IPCC scientists use the terms ‘confidence’ and ‘likelihood,’ each term has a different and very specific meaning relating to levels of certainty.

When scientists mention ‘confidence’, they are referring to the degree of confidence in being correct. In the case of the IPCC where scientists are analysing global climate, issues such as lack of observational data in certain regions, such as Africa, will affect scientists’ confidence in their findings. When scientists mention ‘likelihood’ they are referring to the probability of an event or outcome occurring.

Confidence

The IPCC *Fifth Assessment Report (AR5)* confidence levels are based on the evidence (robust, medium and limited) and the degree of scientific agreement (high, medium and low). The combined evidence and agreement results in five levels of confidence (very high, high, medium, low and very low), as shown in the figure below.

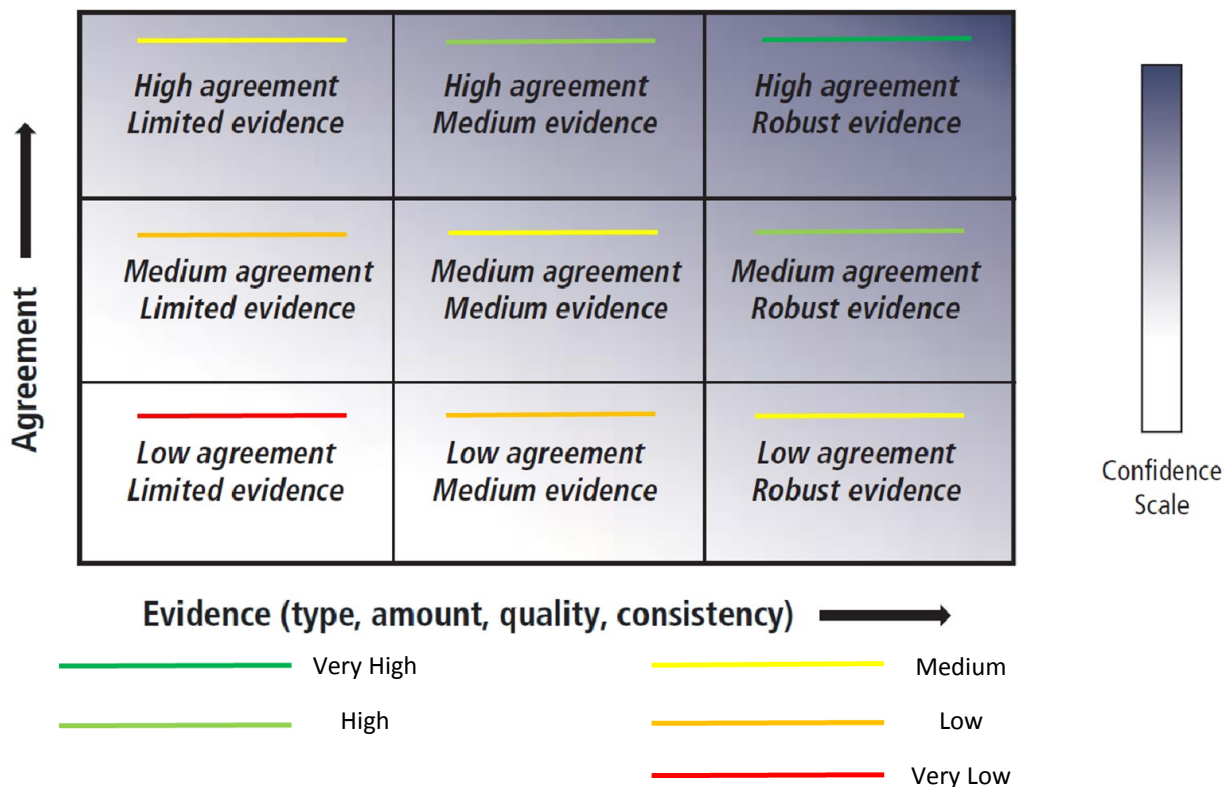


Figure 1: Confidence levels are a combination of level of agreement and evidence. There are five levels, shown with colours. (IPCC 2013)

If an event is given a very high confidence level, there is a combination of high agreement and robust evidence that it will occur.

Likelihood

Standard terms used to define likelihood in the AR5 include:

Term	Likelihood of the outcome
Virtually certain	>99% probability
Extremely likely	>95% probability
Very likely	>90% probability
Likely	>66% probability
More likely than not	>50% probability
About as likely as not	33 to 66% probability
Unlikely	<33% probability
Extremely unlikely	<5% probability
Exceptionally unlikely	<1% probability

If an event is virtually certain, there is a greater than 99% probability that it will occur.

Example: use of the terms 'confidence' and 'likelihood'

To understand the use of these terms, consider the following statement based on the AR5's Summary for Policymakers:

It is *very likely* that regions of the ocean with high salinity where evaporation dominates have become more saline, while regions of low salinity where precipitation dominates have become fresher since the 1950s. These regional trends in ocean salinity provide indirect evidence that the pattern of evaporation and precipitation over the oceans have changed and been enhanced since the 1950s (*medium confidence*).

The term '*very likely*' in the first part of this statement tells us there is a greater than 90% probability that highly saline regions of the ocean will get more saline, and the term '*medium confidence*' tells us scientists have either high agreement based on limited evidence; medium agreement based on medium evidence; or low agreement based on robust evidence.