

TS

Box TS.1 | Treatment of Uncertainty

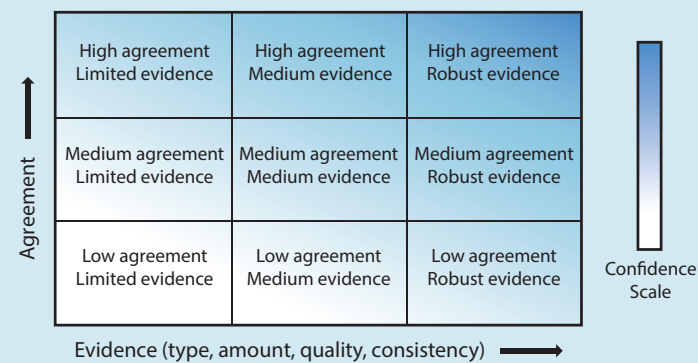
Based on the Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties, this WGI Technical Summary and the WGI Summary for Policymakers rely on **two metrics for communicating the degree of certainty** in key findings, which is based on author teams' evaluations of underlying scientific understanding:

- **Confidence** in the validity of a finding, based on the type, amount, quality and consistency of evidence (e.g., mechanistic understanding, theory, data, models, expert judgement) and the degree of agreement. Confidence is **expressed qualitatively**.
- **Quantified measures** of uncertainty in a finding expressed probabilistically (**based on** statistical analysis of observations or model results, or **expert judgement**).

The AR5 Guidance Note refines the guidance provided to support the IPCC Third and Fourth Assessment Reports. Direct comparisons between assessment of uncertainties in findings in this Report and those in the AR4 and the SREX are difficult, because of the application of the revised guidance note on uncertainties, as well as the availability of new information, improved scientific understanding, continued analyses of data and models and specific differences in methodologies applied in the assessed studies. For some climate variables, different aspects have been assessed and therefore a direct comparison would be inappropriate.

Each key finding is based on an author team's evaluation of associated evidence and agreement. The confidence metric provides a qualitative synthesis of an author team's judgement about the validity of a finding, as determined through evaluation of evidence and agreement. If uncertainties can be quantified probabilistically, an author team can characterize a finding using the calibrated likelihood language or a more precise presentation of probability. Unless otherwise indicated, high or very high confidence is associated with findings for which an author team has assigned a likelihood term.

The following summary terms are used to describe the available evidence: limited, medium, or robust; and for the degree of agreement: low, medium, or high. A level of confidence is expressed using five qualifiers very low, low, medium, high, and very high, and typeset in italics, e.g., *medium confidence*. Box TS.1, Figure 1 depicts summary statements for evidence and agreement and their relationship to confidence. There is flexibility in this relationship; for a given evidence and agreement statement, different confidence levels can be assigned, but increasing levels of evidence and degrees of agreement correlate with increasing confidence.



Box TS.1, Figure 1 | A depiction of evidence and agreement statements and their relationship to confidence. Confidence increases toward the top right corner as suggested by the increasing strength of shading. Generally, evidence is most robust when there are multiple, consistent independent lines of high quality. {Figure 1.11}

The following terms have been used to indicate the assessed likelihood, and typeset in italics:

Term*	Likelihood of the outcome
<i>Virtually certain</i>	99–100% probability
<i>Very likely</i>	90–100% probability
<i>Likely</i>	66–100% probability
<i>About as likely as not</i>	33–66% probability
<i>Unlikely</i>	0–33% probability
<i>Very unlikely</i>	0–10% probability
<i>Exceptionally unlikely</i>	0–1% probability

* Additional terms (*extremely likely*: 95–100% probability, *more likely than not*: >50–100% probability, and *extremely unlikely*: 0–5% probability) may also be used when appropriate.

Degree of agreement = agreement among different studies.

“Mechanistic understanding”?
“Expert judgment”?

How does “expert judgment” provide “quantified measures”?

This confidence scale is a mini, qualitative inductive logic that merges agreement and evidence to yield “confidence” = a shade of blue.

“About as likely as not = 33-66% probability??”

Too wide a range?
33% and 66% are both given the same verbal descriptions.