Food and Agriculture Organization of the United Nations
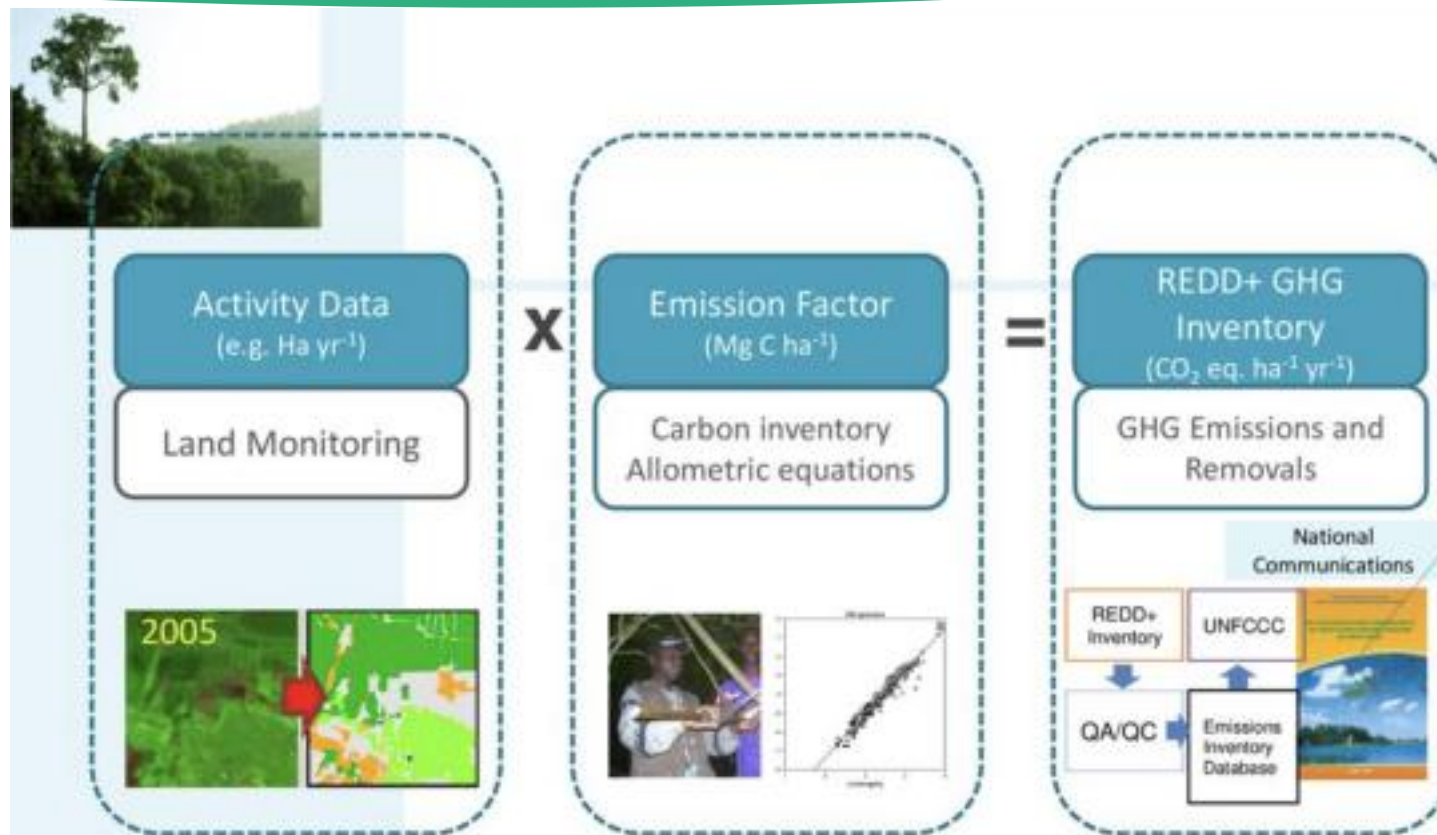
International REDD+ reporting of uncertainties

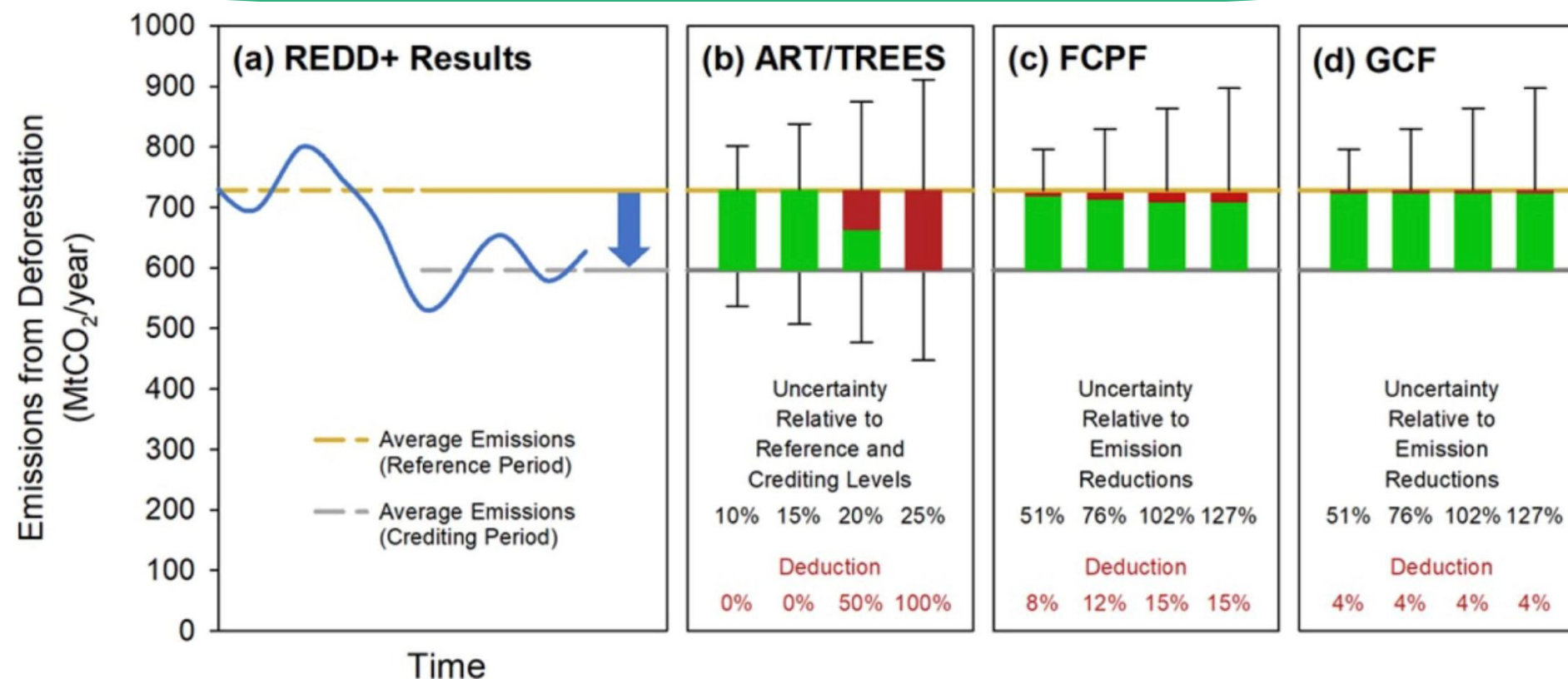Javier G. P. Gamarra, FAO

24/6/2025

Estimating emissions

The IPCC's methodological approach to calculate anthropogenic GHG emissions by sources and removals by sinks related to forest land

Uncertainties in emission reductions are important

Improving uncertainty in forest carbon accounting for REDD+ mitigation efforts

R D Yanai[1], C Wayson[2], D Lee[3], A B Espejo[4], J L Campbell[5], M B Green[6], J M Zukswert[1], S B Yoffe[2], J E Aukema[7], A J Lister[8], J W Kirchner[9,10] and J G P Gamarra[11]

Source: Yanai *et al* (2020) *Environ. Res. Lett.* **15(12):** 124002.

Uncertainties: current status (as of 2022)

Uncertainty in REDD+ carbon accounting:
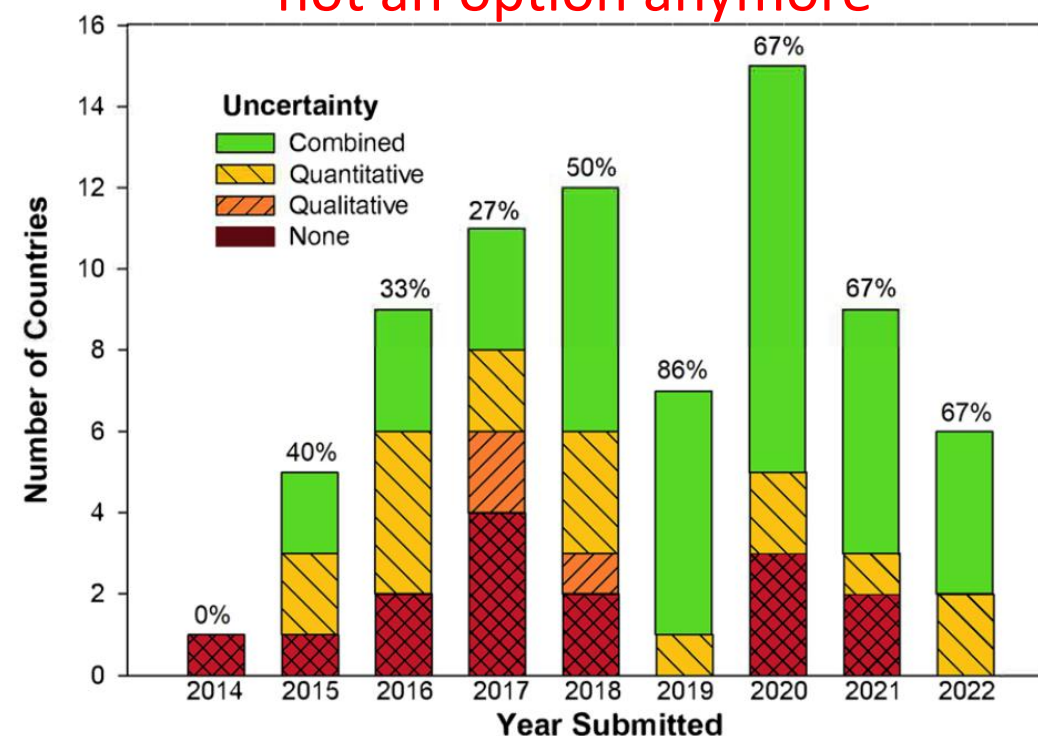a survey of experts involved in REDD+ reporting

Check for updates

Brett J. Butler[1], Emma M. Sass[2], Javier G. P. Gamarra[3], John L. Campbell[4], Craig Wayson[5], Marcela Olguín[6], Oswaldo Carrillo[6] and Ruth D. Yanai[7*]

Source: Butler *et al* (2024) *Carbon Balance Manag.* **19:** 22.
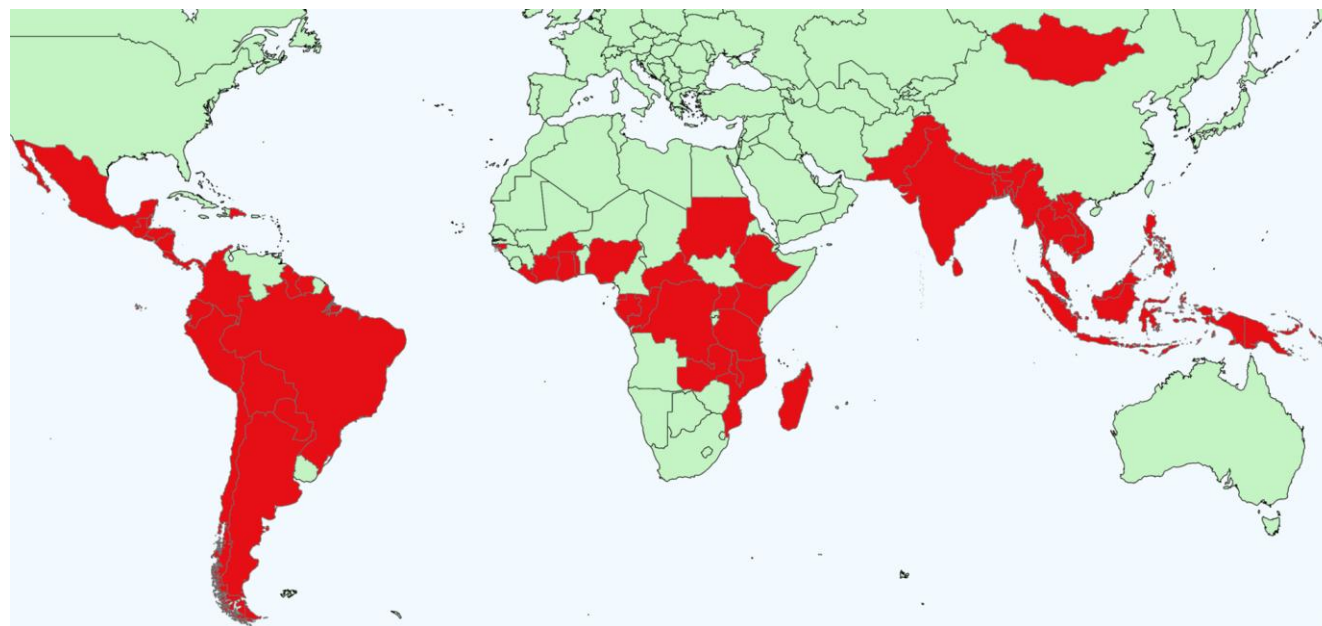
No reporting uncertainties seems not an option anymore

A bit of self-confidence?

| Source	Our assessment	Survey results		
	Countries reporting (%)	Countries reporting (%)	Individual's experience levels[a] (%)	Individual's importance ratings[b] (%)
Emission Factors				
Sampling error	87	57	61	84
Measurement error	4	35	50	75
Error in root-to-shoot ratios	13	26	36	68
Uncertainty in biomass models	14	48	45	77
Activity Data				
Uncertainty in activity data	91	74	45	80

[a] Individuals who rate themselves as extremely or very experienced with a source or error on a 5-point Likert-scale

[b] Individuals who rate a source of error as extremely or very important on a 5-point Likert-scale
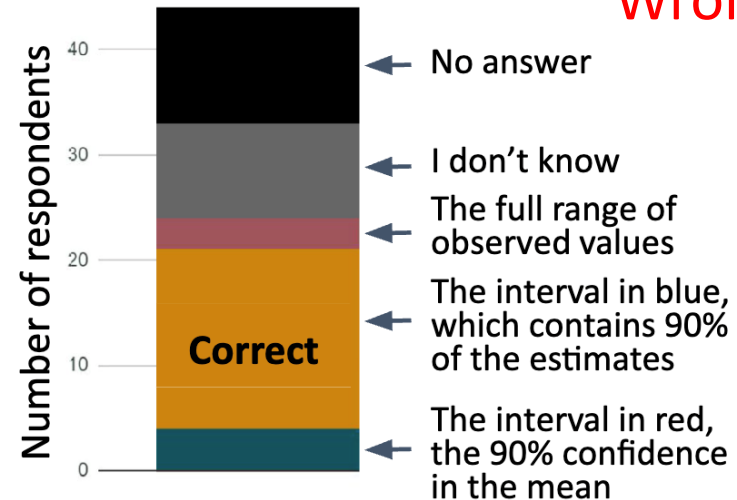
Monte Carlo simulation is growing
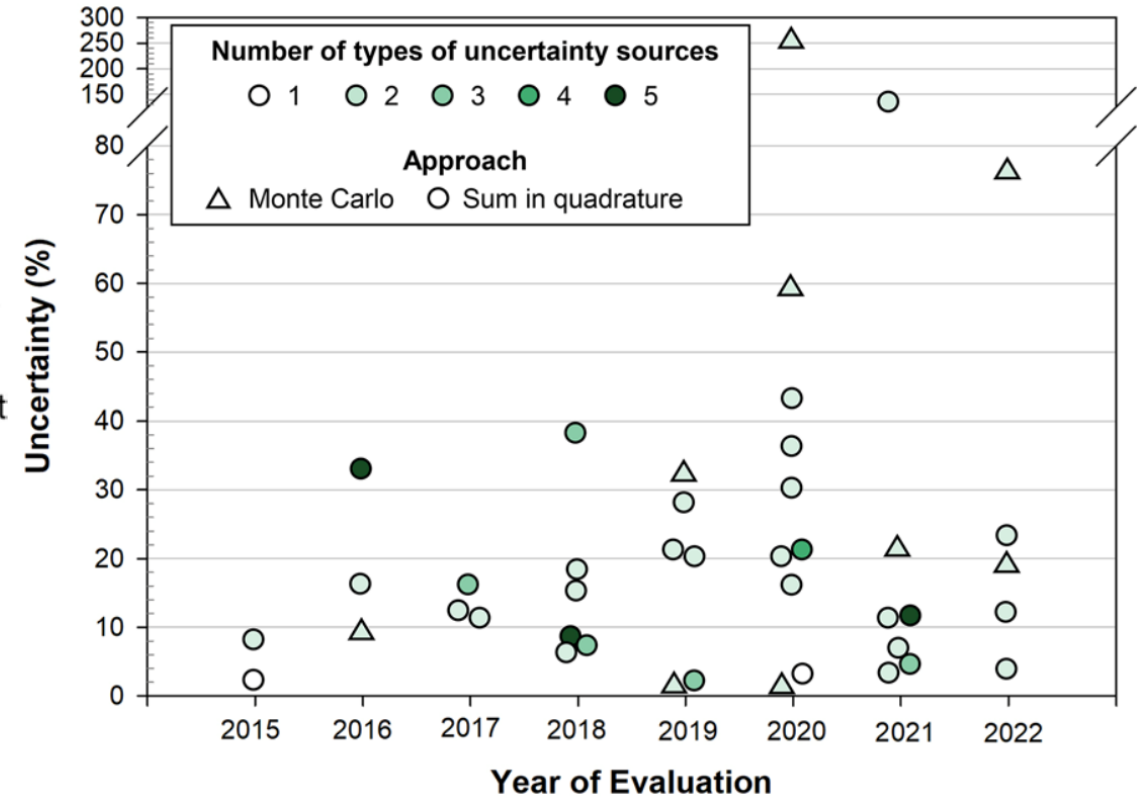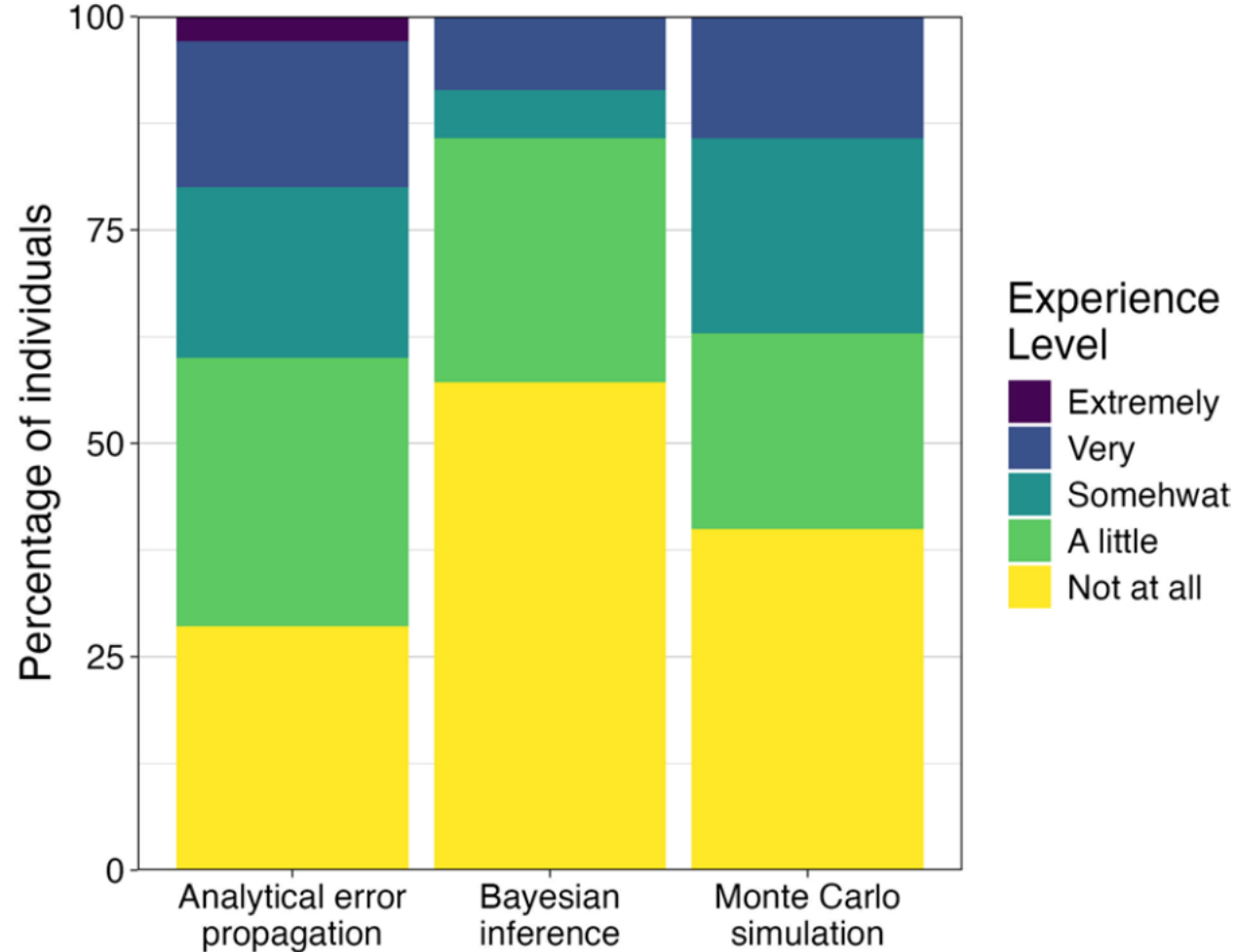
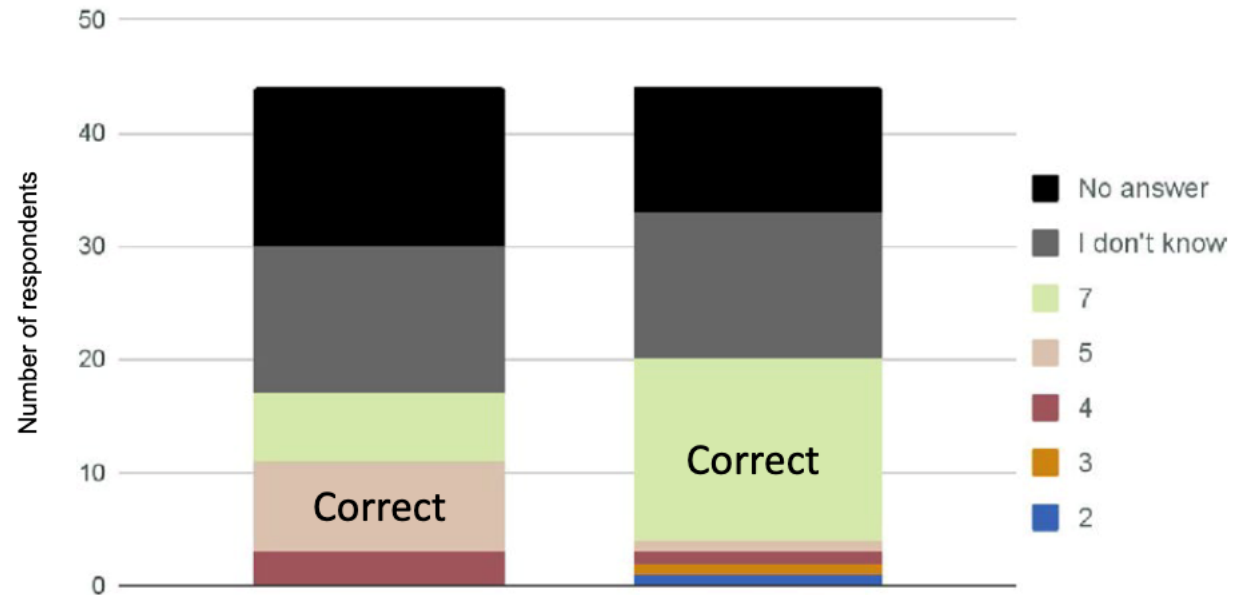# Common mistakes in reporting uncertainties
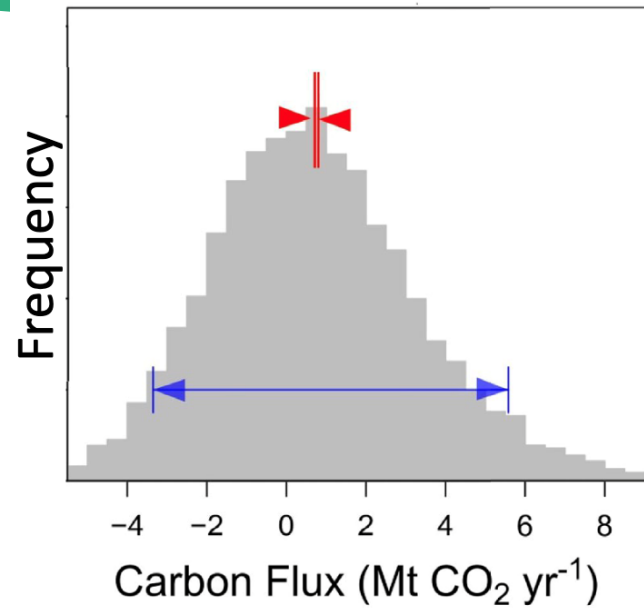
Obstacles to reporting uncertainties
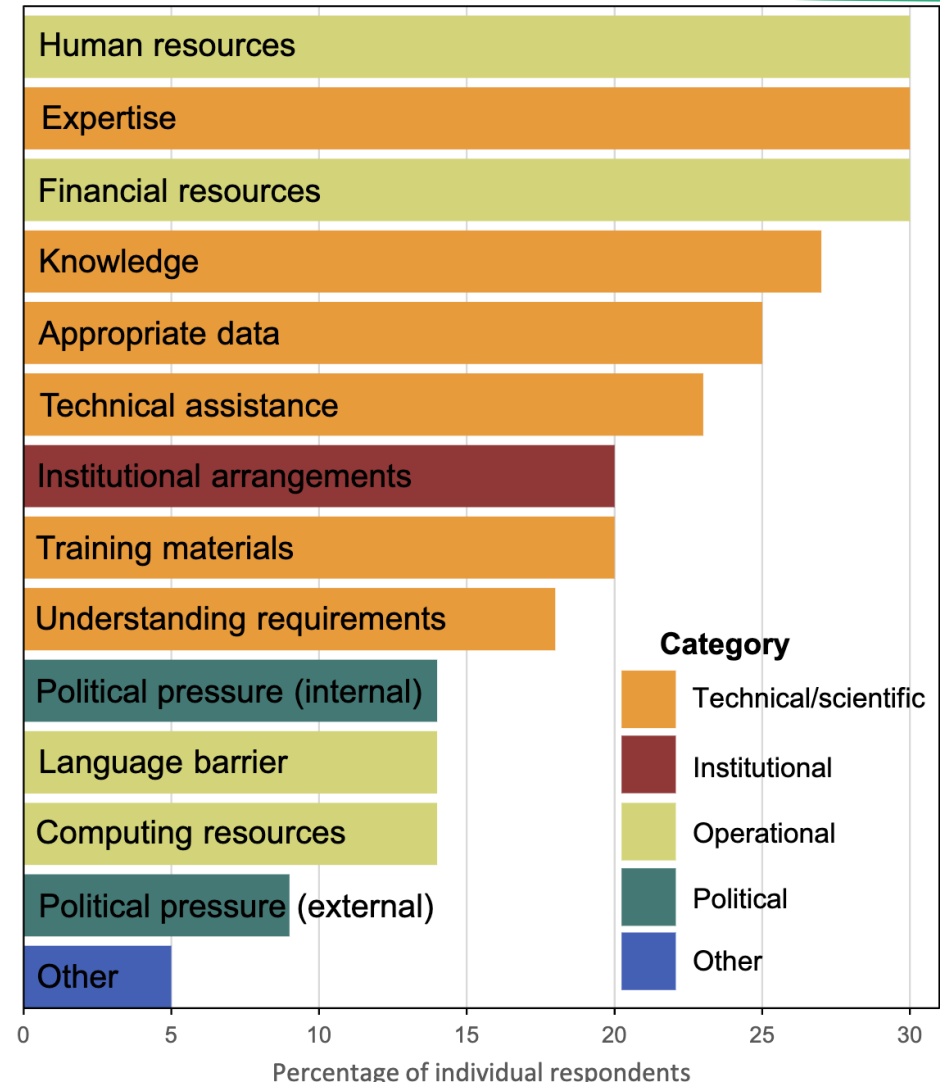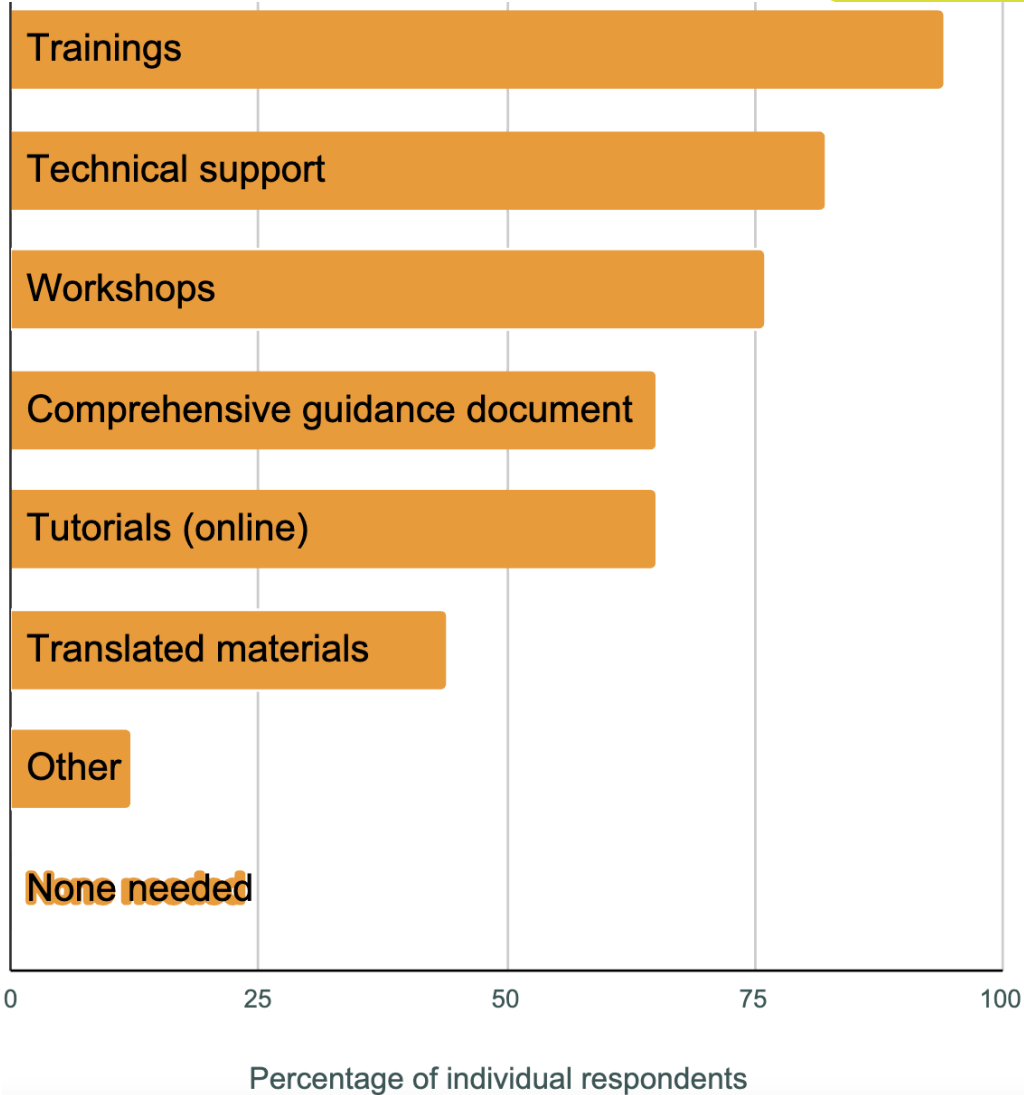

What countries need

Conclusions

- We are far from reporting uncertainties with completeness and precision

- Mismatch between expert's self-assessment and actual reports

- Capacity development positively evolving but sorely needed, but finance is still an issue (more so in the current climate)