

Towards COP 21 and Climate Agreement Negotiations: *Integrating Scientific Uncertainty and Risk in the Decision-making Framework*



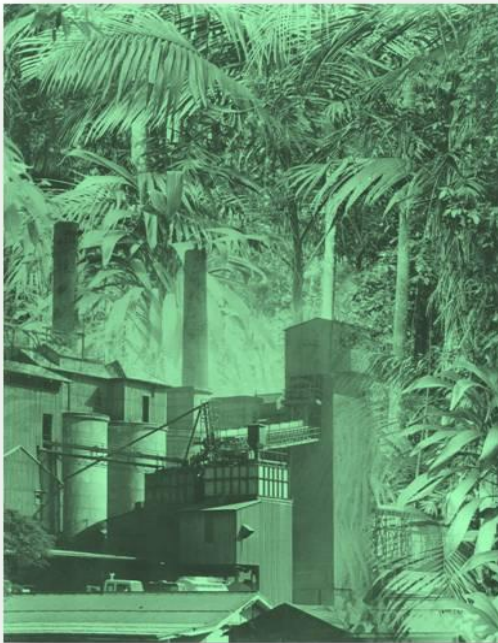
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*“A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because the opponents eventually die, and a new generation grows up that is familiar with it.” (trans. Frank Gaynor, 1950)
Nobel Laureate-Quantum Physics, Max Planck (1858–1947)*

KEY POINTS



A watershed has now been reached for the published scientific information on global climate change reviewed at COP meetings of UNFCCC over time: *to finalize the terms of the new Climate Agreement to be negotiated at Paris in December 2015.*

Given the complexity of the scientific data and technological information on which climate change is based, it should not be surprising that decision-making on the potential consequences of climate change will have to be made under some degree of scientific uncertainty and/or risk.

If there were a perception of risk or scientific uncertainty whether an upper limit for global temperature rise of 2°C above pre-industrial

levels by 2100 would prevent significant adverse environmental impacts, then negotiations over mitigation measures or pathways to tackle climate change would be confounded.

If there were scientific uncertainty or risk whether a mitigation measure or pathway would be climate change- or cost-effective compared to other measures or pathways, the likelihood of it being adopted would be limited.

One issue that needs to be recognized for climate change negotiations is the significant difference between law and science for fact finding and decision-making under scientific uncertainty and risk.

- The scientific model - in marked contrast to law - will defer a decision if inadequate information exists. In essence, there is a total absence of finality in the scientific model as it operates under no deadlines.
- The legal model will resolve a factual dispute in circumstances where scientific uncertainty exists. In deciding cases involving both actual and potential environmental impacts, law produces a final determination of facts. Finding of facts by the court on disputed scientific evidence is a crucial part of the legal process.
- *An effective integration between the legal and scientific decision-making models is required to facilitate decision-making at COP 21.*

Conclusions for Achieving Integration

- (i) Decision-making under scientific uncertainty and risk is a real issue confronting climate agreement negotiations at COP 21.
- (ii) From a risk management perspective, the agreement to limit temperature rise to a maximum of 2°C above pre-industrial levels by 2100 represents the existing “*acceptable level of risk*” for managing the consequences of climate change.
- (iii) Adhering to 2°C as the safe upper temperature limit will be crucial for UN Parties at COP 21 in deciding the measures and

pathways needed to mitigate the impacts of climate change in their national contributions.

- (iv) Any scientific uncertainty - created by divergent scientific opinion - over 2°C as the safe upper limit must be resolved. The legal model offers an alternative approach to science for resolution.
- (v) Endorsing the accepted body of knowledge from the social sciences for the adoption of scientific innovations would enable UN Parties to objectively evaluate mitigation measures and pathways in their decision-making on national contributions.
- (vi) *The 'IPCC Fifth Assessment Report: Climate Change (2014) 'Impacts, Adaptation and Vulnerability', is equivalent to an Environmental Impact Assessment: The role of an EIA is to facilitate decision-making; in the case of the IPCC Report, through the information made available on the consequences of climate change.*
- (vii) To offset one criticism of the EIA process – *inaccuracy of impact predictions because of scientific uncertainty* – potential environmental impacts in the IPCC Report that have not been fully evaluated, because of lack of information, need to be identified.

In these circumstances, options for resolution include: more science is required or applying the United States Federal Regulation for “*Incomplete or unavailable information*” in the EIA process.

- (viii) *The 'IPCC Fifth Assessment Report: Climate Change (2014) 'Mitigation of Climate Change' is equivalent to a Qualitative Risk Analysis: its role is to facilitate decision-making on mitigation measures and pathways to manage the wide spectrum of global risks to an acceptable level of risk.*

A Qualitative Risk Analysis assesses the probability of a risk by ranking the level of risk into a number of descriptive categories such as “High”, “Medium” and “Low”.

- (ix) Public trust and confidence in any Qualitative Risk Analysis is essential for achieving its role. Uncertainty issues to avoid in this regard include: limited objective scientific data for the risk assessment; and where achieving consensus on ‘*scientific*’ (or

‘factual’) risk and ‘*public perception of risk*’ as to what constitutes an acceptable level of risk becomes problematic.

- (x) Courts in the United States, the UK and Australia recognize that an EIA is not a decision-making end in itself. Its purpose is to assist the decision-maker. This approach should also be adopted for Qualitative Risk Analysis: to be a decision-making aid and not the decision end-point.

To download the full article - which the “Key Points” summarize – click on the following link:

<http://www.environment-adr.com/uploads/COP21-Climate-Risk-Uncertainty.April2015.pdf> ... (502 KB)

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