

# GEOENGINEERING:

## Humanitarian Perspectives

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# GEOENGINEERING

**The deliberate large-scale intervention  
in the Earth's climate system,  
in order to moderate global warming**

*No regulatory framework*

*Cheaper than a nuclear weapon*

*Probable in our lifetime*

*(if “runaway CC”, or crisis + willing ‘hero’)*

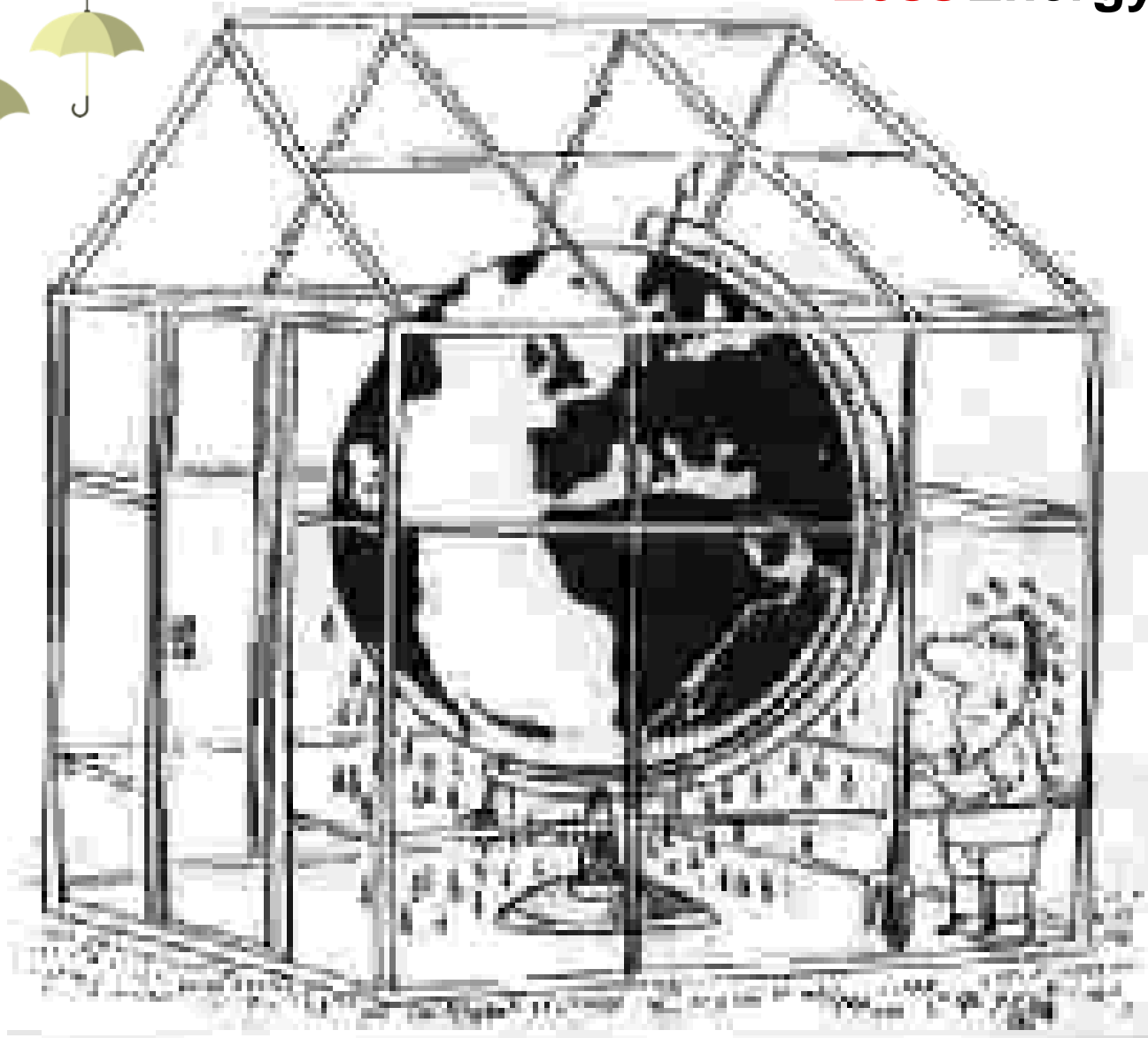




**SRM: Reflect  
More Energy**

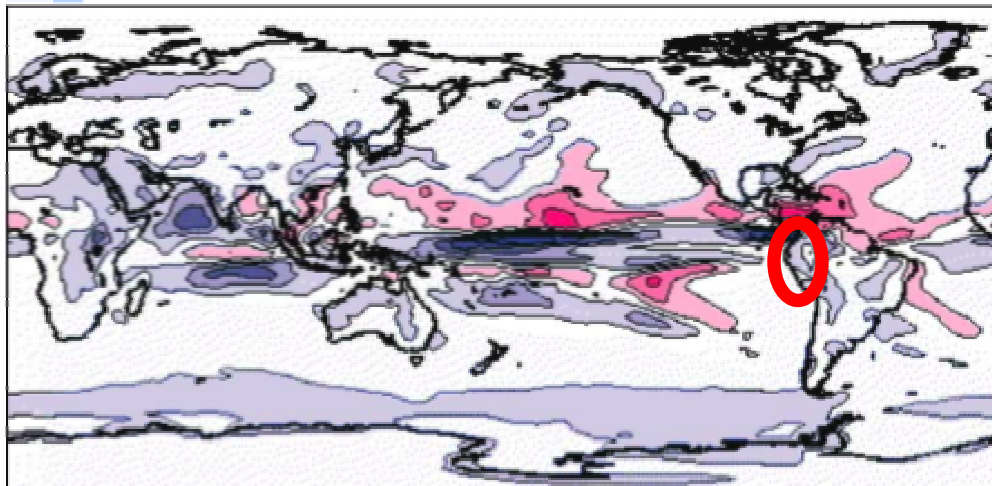


**CCS: Trap  
Less Energy**

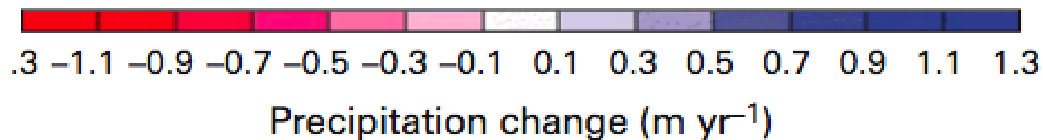
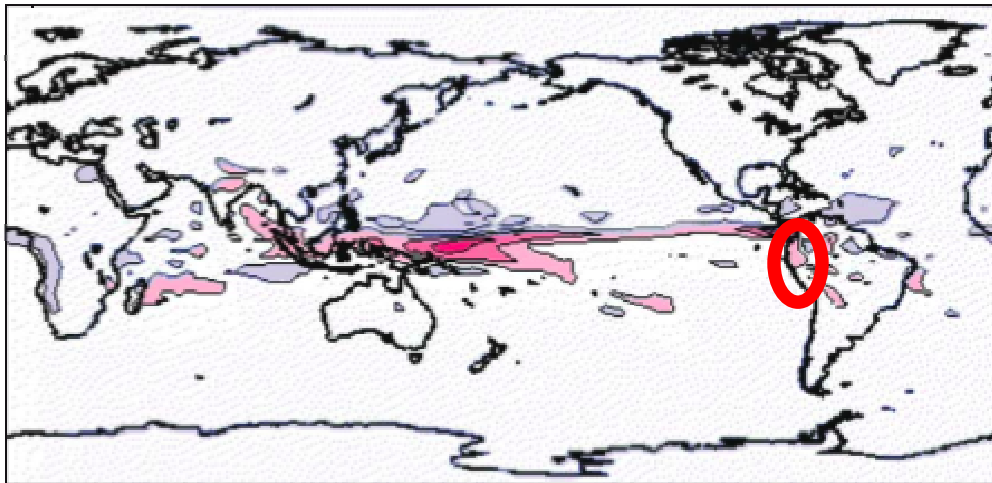


# To Potato or not to Potato: A geoengineering question

CC  
+  
No SunBlock



CC  
+  
SunBlock





# 2010: Two Geoengineering Questions from Red Cross

1. How will the most vulnerable help make geoengineering decisions?
2. Who will pay for humanitarian work in a geoengineered world?



# 2017: Red Cross Red Crescent Climate Centre's paper

## Earth's Future



### RESEARCH ARTICLE

10.1002/2016EF000464

#### Special Section:

Crutzen +10: Reflecting upon  
10 years of geoengineering  
research

#### Key Points:

- Geoengineering decisions are a humanitarian concern: the deliberate manipulation of the global climate can impact vulnerable people not included in decisions
- The Paris Agreement aspiration to keep global warming below 2°C did not aim to endorse SRM, but rather ambitious mitigation pathways
- If resources must be directed towards exploring geoengineering options, the needs and role of the most vulnerable should be given full consideration
- In the past 10 years, humanitarian players have been largely absent from discussions on geoengineering research and governance; a more proactive and anticipatory engagement is warranted

## Geoengineering: A humanitarian concern

Pablo Suarez<sup>1,2</sup> and Maarten K. van Aalst<sup>1,2,3,4</sup>

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**Abstract** The humanitarian sector is active at the global frontline of climate impacts, and has a track record in influencing the climate change policy agenda. Geoengineering is a humanitarian concern: the potential for deliberate large-scale intervention in the Earth's climate system has major implications in terms of impacts on the most vulnerable. Yet, so far the humanitarian community has largely been absent from geoengineering deliberations. Geoengineering may be perceived as too theoretical, too complex, and not imminent enough to merit attention. However, early engagement by the sector is imperative to ensure that humanitarian considerations are integrated into policy decisions. Those who can suffer the worst outcomes need to be involved; especially given the plausibility of “predatory geoengineering” where recklessly self-concerned actions may result in harmful consequences to others. This paper explores the humanitarian dimensions of geoengineering, specifically relating to solar radiation management (SRM). Drawing from the engagement of the Red Cross Red Crescent Climate Centre in SRM discussions, we discuss how to improve linkages between science, policy and humanitarian practice. We further propose the creation of a geoengineering risk management framework to ensure that the interests of the most vulnerable are considered and addressed - including the voices of all stakeholders.

### 1. Introduction

Less than two decades ago, science began loudly warning about the potential for climate change to trans-

***“The potential for [geoengineering] has major implications in terms of impacts on the most vulnerable”***

**Special Section:**

Crutzen +10: Reflecting upon  
10 years of  
research

from the Max Planck Institute for Chemistry, Mainz, Germany, <sup>2</sup>International Centre for  
Longer-Range Future, Boston University, Boston, Massachusetts, USA, <sup>3</sup>Department of Science, Technology,

***“No one likes to be a rat in someone else’s laboratory”***

**Key Points**

- Geoengineering decisions are a humanitarian concern: the deliberate manipulation of the global climate can include humanitarian impacts.
- The humanitarian community has largely been absent from geoengineering deliberations. Geoengineering may be perceived as too theoretical, too complex, too risky, and too uncertain.
- If research on geoengineering is to be useful, it must include the interests of the most vulnerable.
- The most vulnerable should be given full consideration in the decision-making process.
- In the context of climate change, humanitarian engagement is warranted.

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***“Potentially delusional assumptions of rationality”***

we discuss how to improve linkages between science, policy and humanitarian practice. We further propose the creation of a geoengineering risk management framework to ensure that the interests of the

***“Predatory Geoengineering”***

Less than two decades ago, science began loudly warning about the potential for climate change to trans-





# ***“In the context of tipping points or runaway climate change scenarios,***

10.1002/2016EF000464

Pablo Suarez<sup>1,2</sup> and Maarten K. van Aalst<sup>1,2,3,4</sup>

# ***SRM could help reduce impacts on some of the most vulnerable, but***

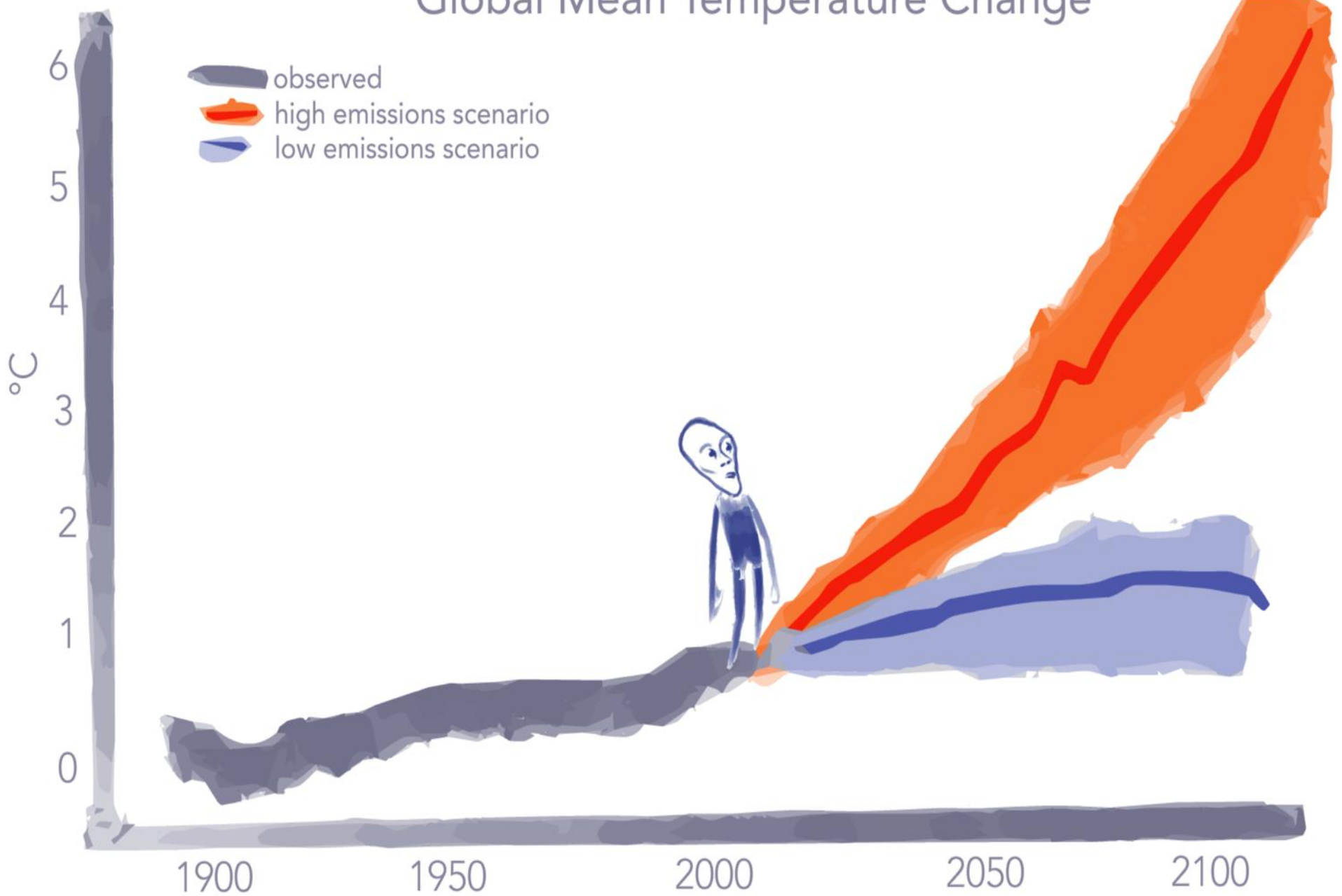
## **Key Points:**

- Geoengineering decisions are a humanitarian concern: the deliberate

record in influencing the climate change policy agenda. Geoengineering is a humanitarian concern: the potential for deliberate large-scale intervention in the Earth's climate system has major implications in terms of impacts on the most vulnerable. Yet, so far the humanitarian community has largely been absent

# ***global power dynamics are not set up to ensure that the interests of the most vulnerable are elicited, considered, and addressed.”***

# Global Mean Temperature Change



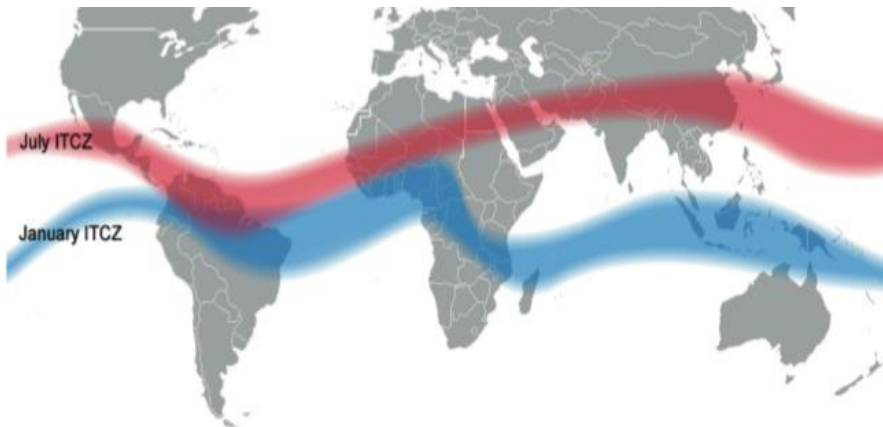


***“To Geoengineer Or Not To Geoengineer”, with Regie Gibson***

# Some More Questions

“Landscapes” vs. “Cloudscapes” ?

Whose Hand on the Thermostat ?



What Research & Governance regime ?

What if unilateral deployment becomes imminently likely ?

What role for Development Sector?