

"SOFT"

Geoengineering??



You mean like...



"Soft"

War?

"Soft"

Torture?

"Soft"

Rape?

Or more like...



"Soft"
Drugs?

How about...

"Gateway" Geoengineering??



“Soft Sell” Geoengineering



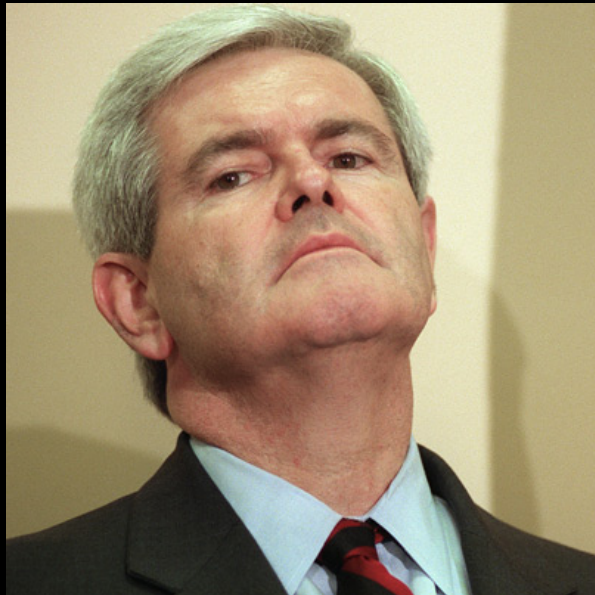
“That is why “soft” geoengineering techniques – less ambitious, less disruptive, and less threatening approaches – are important, they get people used to the basic concepts of geoengineering without scaring them. And in so doing, they expand the scope of climate policy discussion in important ways”

- Samuel Thernstrom,
AEI Magazine June 5 2009

“Soft Sell” Geoengineering

1. It ain't all "plan B"....

PLAN "A"



"This is one method that holds the promise of addressing any threat from global warming at a fraction of the cost. Instead of imposing an estimated \$1 trillion cost on the economy by Boxer-Warner-Lieberman, geoengineering holds forth the promise of addressing global warming concerns for just a few billion dollars a year. Instead of penalizing ordinary Americans, we would have an option to address global warming by rewarding scientific innovation."

The PLAN “A” Crowd



1. It ain't all “plan B”....

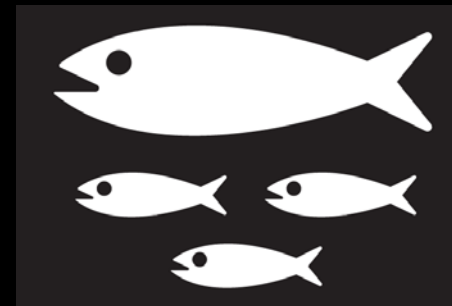
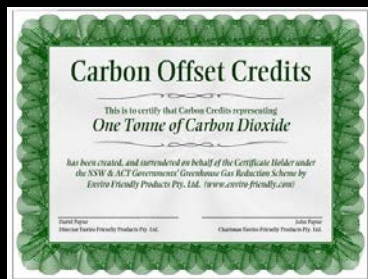
PLAN “C” (commerce)



“It's really more of a business experiment than a scientific experiment,”

- Russ George

The PLAN “C” Crowd



1. It ain't all "plan B"....

PLAN "D" (Defense)

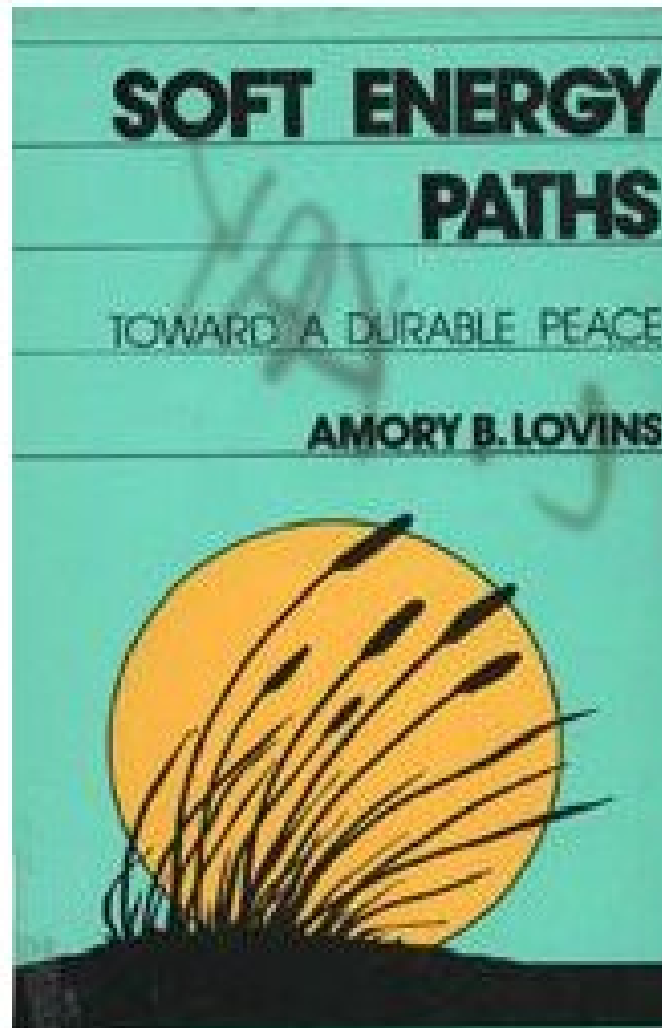


2. Scale Matters

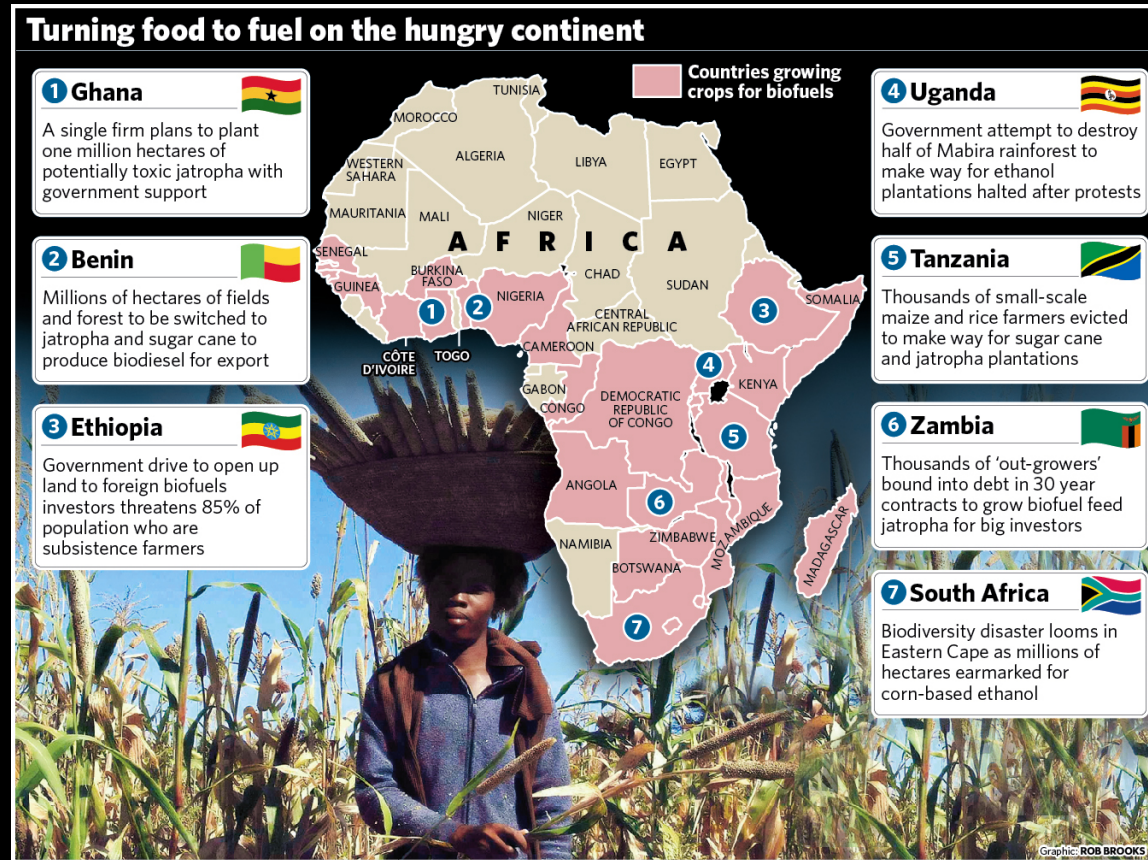


Biofuels = A Soft Sell

2. Scale Matters



2. Scale Matters



Biofuels = A hard hit

2. Scale Matters

Example of Scale Effects in 'Soft Sell' Geo-schemes I



FERTILIZERS



2. Scale Matters

Example of Scale Effects in 'Soft Sell' Geo-schemes II



“The feasibility of this scheme at the scale required is highly questionable. If it were possible, there would be major biodiversity and biogeochemical implications. Not only would there be impacts of decreased light penetration and temperature changes on phytoplankton, but the microbial composition of the sea surface microlayer would change, and air-sea exchange rates of CO₂ and other gases (highly sensitive to sea surface properties, including bubbles) would also be affected.”

- UN Convention On Biological Diversity Expert Review.

2. Scale Matters

Example of Scale Effects in 'Soft Sell' Geo-schemes III



“Recent assessment of global biochar potential indicates that the capture of 12% of annual anthropogenic CO₂ emissions would require **556 million hectares** of dedicated biomass plantations, much of it through the conversion of tropical grasslands. In addition to the impacts on biodiversity, these land use changes would entail net greenhouse-gas emissions due to land use change.”

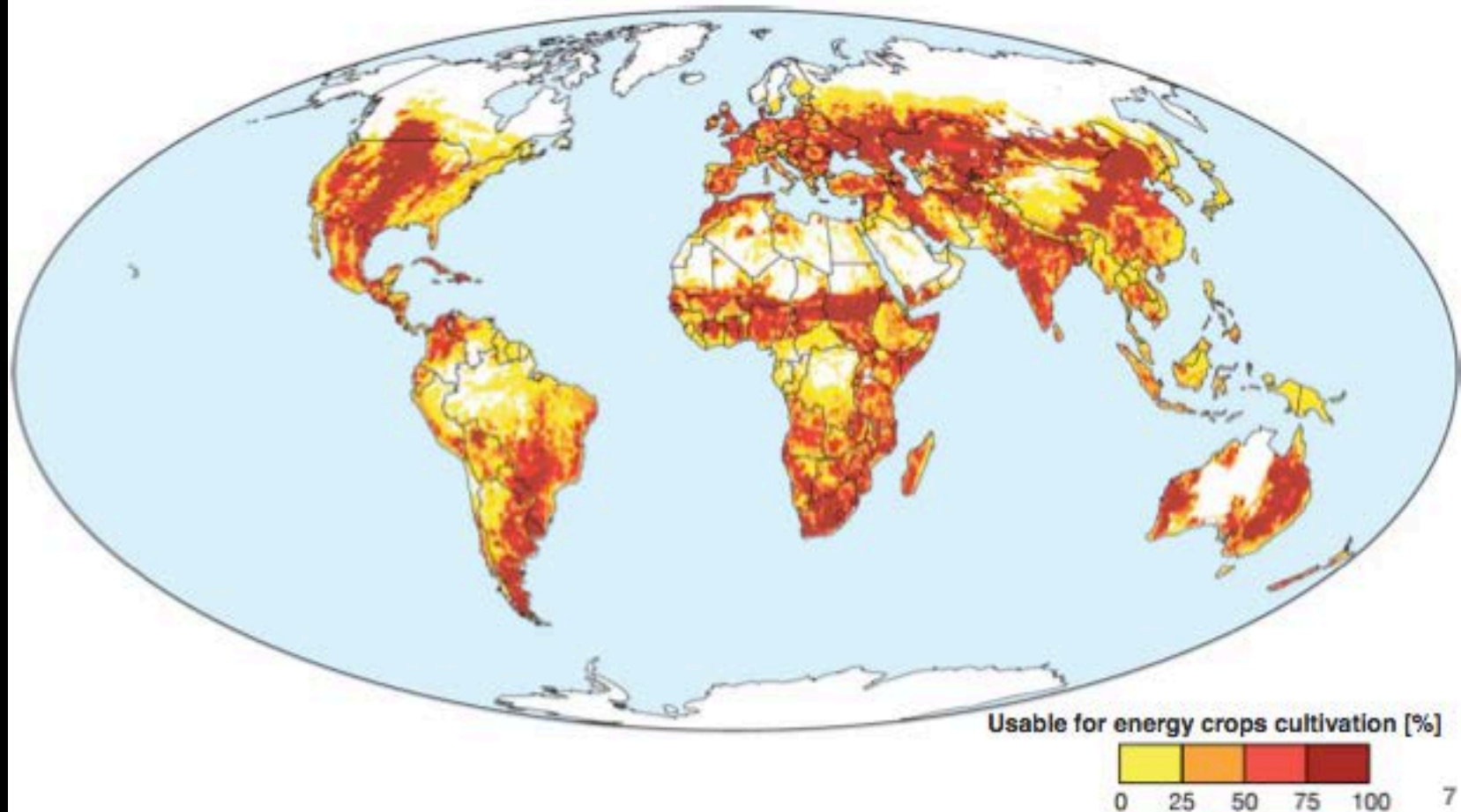
-UN Convention On Biological Diversity Expert Review.

(nb. Therefore 100% CO₂ capture = all of asia + middle east!)



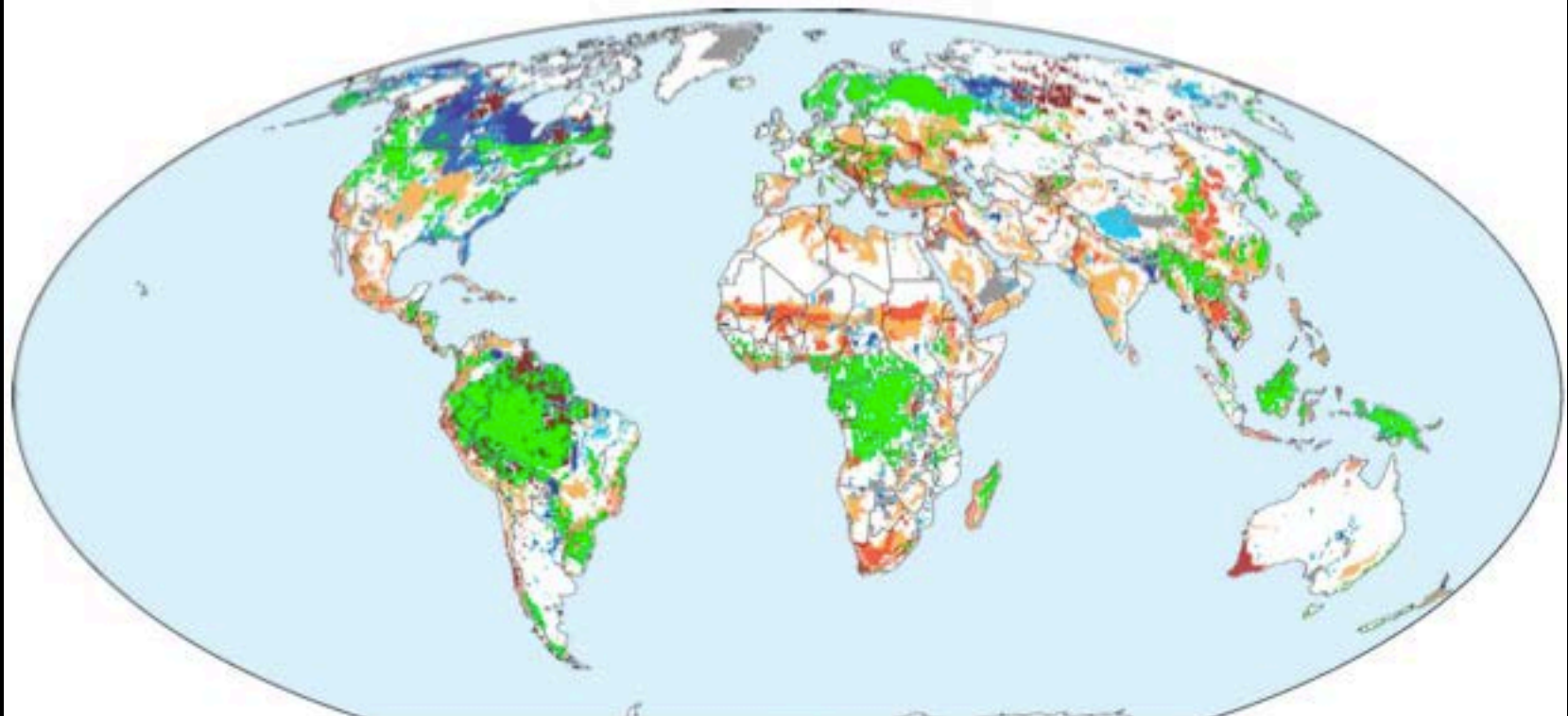
Source: Beringer & Lucht, 2008

Possible regions for energy crop cultivation





Some restriction factors and elements

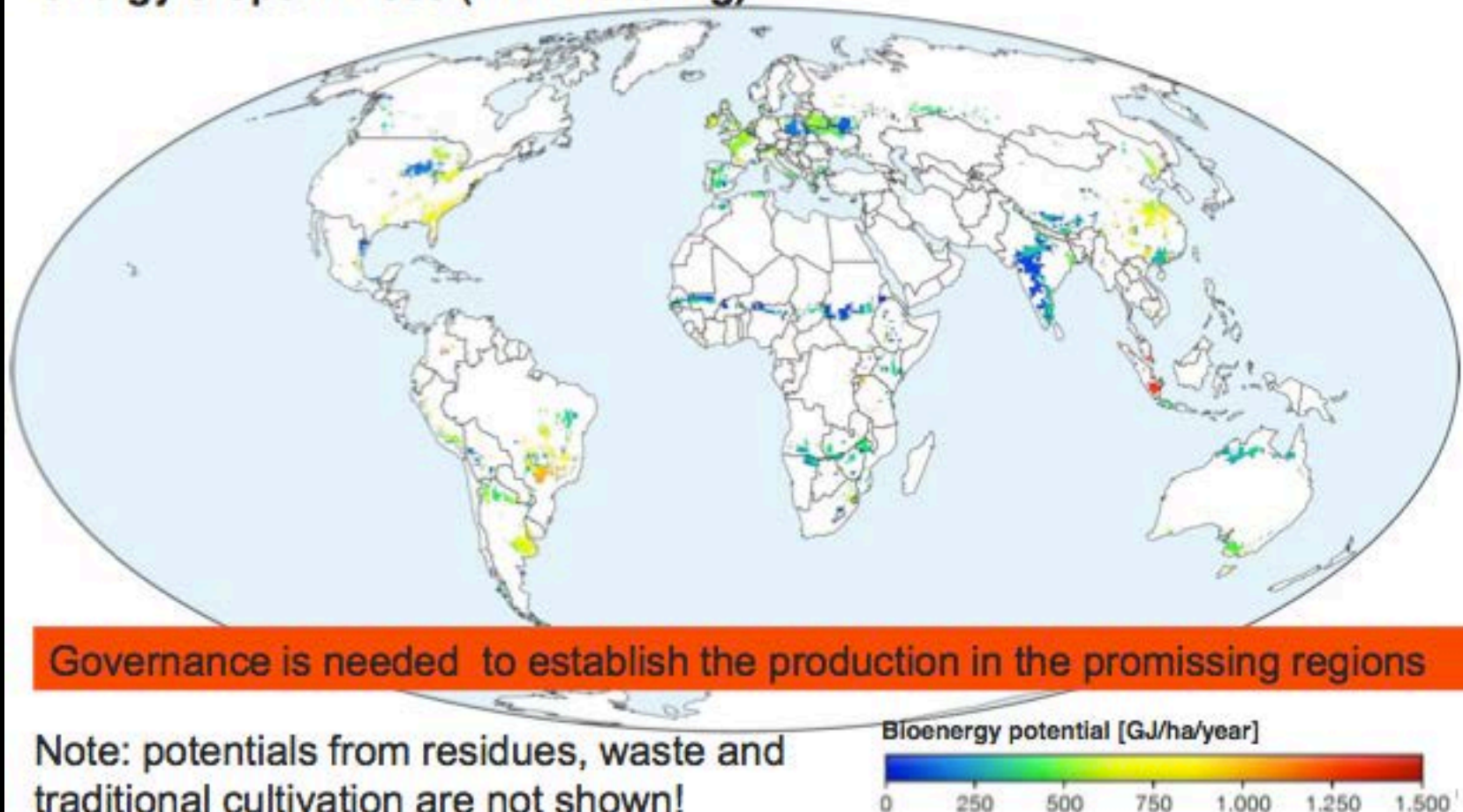


- Extreme degraded areas (no use)
- Highly degraded areas (30% use possible)
- Protected Areas (no use)

- Areas with high biodiversity (no use)
- Wetlands (no use)
- Compensation of the CO₂-release by changes in land use not possible within 10 years



Sustainable available bioenergy potential from energy crops in 2050 (with watering)



Governance is needed to establish the production in the promising regions

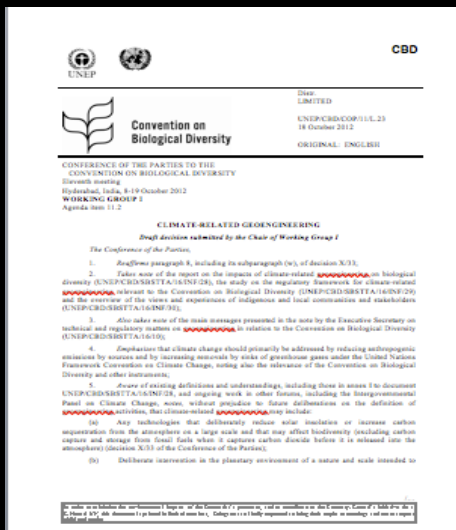
Note: potentials from residues, waste and traditional cultivation are not shown!

2. Scale Matters

Example of Scale Effects in 'Soft Sell' Geo-schemes III



- + Overall loss of soil carbon (stimulates bacterial activity?)
- + release of black carbon (soot) to air - warming effect
- + darkens light soils - reduced albedo?
- + impacts on crop production are highly variable.



6. *Notes* the findings contained in document UNEP/CBD/SBSTTA/16/INF/28, that **there is no single geoengineering approach that currently meets basic criteria for effectiveness, safety and affordability**, and that approaches may prove difficult to deploy or govern;

7. *Also notes* that there remain significant gaps in the understanding of the impacts of climate-related geoengineering on biodiversity, including:

(a) How biodiversity and ecosystem services are likely to be affected by and respond to geoengineering activities at different geographic scales;

(b) The intended and unintended effects of different possible geoengineering techniques on biodiversity;

(c) The socio-economic, cultural and ethical issues associated with possible geoengineering techniques, including the unequal spatial and temporal distribution of impacts;



3. Geoengineering is Rogue..



One Variable (Emissions) = Already Complex

3. Geoengineering is Rogue..



Three Variables?! = Way Too Complex!!

The PLAN “A” Crowd love collapsing multilateralism...



Forget “Soft Sell” Geoengineering

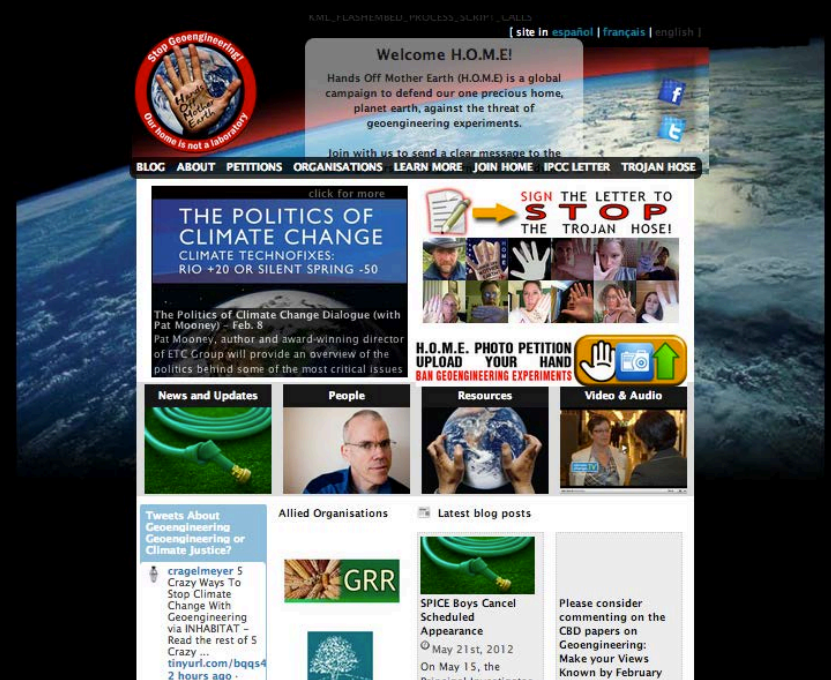


Lets “Hard Sell” Real Action on Climate change



“yes we can”





<http://www.etcgroup.org/issues/climate-geoengineering>

<http://www.handsoffmotherearth.org/>

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