
Papers

How the UN's anti-biotech policies worsen global warming

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Abstract

Numerous United Nations policies and programmes inhibit the development and use of important tools that could help both to reduce carbon dioxide emissions and to conserve water, especially in poorer regions of the world. A prime example is the UN's unscientific, anti-innovative approach to regulating recombinant DNA-modified (or gene-spliced, or 'genetically modified (GM)') plants that could both lessen agriculture's 'carbon footprint' and help farmers adapt to droughts and water shortages (a predicted outcome of warming). Like much of what transpires within UN agencies and programmes, the regulation of GM organisms and food derived from them defies scientific consensus and common sense. The result is vastly inflated research and development costs, less innovation, and diminished exploitation of superior techniques and products that could promote adaptation to environmental and public health challenges.

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Catastrophes are not democratic. When the *Titanic* sank, a disproportionate number of passengers lost were from the decks below the waterline, the cheaper accommodations. And according to an apocalyptic report from the United Nations, the same phenomenon will occur as global temperatures continue to rise: Food and water shortages, fires and floods,

and the extinction of millions of species will affect most the poorest regions of the world.

The key to coping with the inexorable increase in temperatures is *resilience* – the ability to recover from or adapt to adversity – rather than focusing primarily on mitigation or prevention. Significant reductions of greenhouse gas emissions will be too expensive, too little and too late. Reductions in the burning of fossil fuels sufficient to have even a modest impact would stifle economic growth and plunge the world into chaos. As MIT meteorology professor Richard Lindzen has said, 'The alleged solutions have more

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potential for catastrophe than the putative problem'. In any case, discernible effects on warming would be decades away.

An excruciatingly cruel irony is that the United Nations itself is a formidable obstacle to resilience and adaptation to global warming.

Numerous UN policies and programmes inhibit the development and use of important tools that could help both to reduce carbon dioxide emissions and to conserve water, especially in poorer regions of the world. A prime example is the UN's unscientific, anti-innovative approach to regulating recombinant DNA-modified (or gene-spliced, or 'genetically modified (GM)') plants that could both lessen agriculture's 'carbon footprint' and help farmers adapt to droughts and water shortages (a predicted outcome of warming).

Many of the currently cultivated recombinant DNA-modified crops use herbicide resistance instead of tilling the soil to control weeds. This offers dual benefits: both the reduction of greenhouse gas emissions and the sequestration of carbon. Tilling not only requires the combustion of tractor fuel, which creates greenhouse gases, but also exposes the carbon in the soil to oxygen, thereby returning carbon to the atmosphere as CO₂.

Irrigation for agriculture accounts for approximately 70 per cent of the world's fresh water consumption – even more in areas of intensive farming and arid or semi-arid conditions – so the introduction of plants that grow with less water would allow vast amounts to be freed up for other uses. Especially during drought conditions – which currently plague much of Europe, Africa, Australia, and the United States – even a small percentage reduction in the use of water for irrigation could result in huge benefits, both economic and humanitarian.

Recombinant DNA-modified crop varieties can accomplish this, and are widely recognised by agricultural scientists and policy makers as critical to meeting future water shortages.

Recombinant DNA modification offers plant breeders the tools to make old crop

plants do spectacular new things. In at least 22 countries, farmers are using recombinant DNA-modified crop varieties to produce higher yields, with lower inputs and reduced impact on the environment. More than a 1.4 billion acres (577 million hectares) have been cultivated.

Plant biologists have identified genes regulating water utilisation that can be transferred into important crop plants. These new varieties are able to grow with smaller amounts or lower quality water, such as water that has been recycled or that contains large amounts of natural mineral salts. Where water is unavailable for irrigation, the development of crop varieties able to grow under conditions of low moisture or temporary drought could boost yields, lengthen the time that farmland is productive, and permit adaptation to warmer temperatures.

Aside from new varieties that have lower water requirements, pest- and disease-resistant recombinant DNA-modified crop varieties also make water use more efficient in indirect ways. Because much of the loss to insects and diseases occurs after the plants are fully grown – that is, after most of the water required to grow a crop already has been applied – the use of recombinant DNA-modified varieties that experience lower post-harvest losses in yield means that the farming (and irrigation) of fewer plants can produce the same total amount of food. We get more crop for the drop.

During the past decade, however, various UN agencies and programmes have created gratuitous and prodigious regulatory obstacles to the development and use of recombinant DNA-modified plants. The UN's Cartagena biosafety protocol, which regulates field testing, and the work of the Codex Alimentarius Commission, the agency that sets international food standards, have been widely condemned by the scientific community. In addition, a technical working group of the UN Environment Program is currently considering whether to recommend a moratorium on all field testing and

commercialisation of recombinant DNA-modified trees. That would be a devastating blow to efforts to preserve biodiversity, develop new sources of biofuels, prevent deforestation, and design trees that sequester more carbon. It is grotesque even to consider such a recommendation.

The UN's lack of coherence and consistency is difficult to comprehend. While the UN's Intergovernmental Panel on Climate Changes warns of the need to reduce CO₂ emissions and to address water shortages, and the Secretary-General of the World Meteorological Organization calls for 'integrated water-resources management', a veritable alphabet soup of other UN agencies makes virtually impossible the development of recombinant DNA-modified plants that can

lower CO₂ emissions and grow with poor quality water or under drought conditions. Consider, too, that the use of recombinant DNA technology is not resource-intensive – quite the opposite: Little new investment is required; the UN must simply adopt a science-based, less onerous approach to regulation – in other words, to get out of the way of plant breeders and farmers.

Like much of what transpires within UN agencies and programmes, its regulation of biotechnology defies scientific consensus and common sense. The result is vastly inflated research and development costs, less innovation, and diminished exploitation of superior techniques and products that could promote adaptation to environmental and public health challenges.