

Agricultural Competitiveness Green Paper Submission

Date submitted

12/12/2014

Name of Organisation/Individual

Alan Harris

What are the top policies from the Green Paper that the Government should focus on in the White Paper and why?

What policies from the Green Paper don't you support and why?

General Comment

Cause of drought.

There have been many claims as to the cause of Australia's extensive droughts, from greenhouse gases - with the most notable being carbon dioxide, or natural weather cycles, but there is one event completely overlooked - the Asian Brown Cloud.

There are a number of Atmospheric Clouds of Pollution around the world, but the Asian Brown Cloud is the biggest and most damaging of all.

U.S. scientists have observed atmospheric pollution from China is impacting their weather systems, including an alarming increase of mercury. Excessively high levels of mercury from the burning of fossil fuels in Asia have been found in Indian and Pacific Ocean fish.

It stands to reason if Asian Atmospheric Pollution can affect U.S. weather, it can certainly extend to Australia and beyond.

In fact, the adverse affect of the Asian Brown Cloud was discovered and investigated in 1999 -

Massive Pollution Documented Over Indian Ocean

An international group of scientists participating in a climate field experiment has documented widespread pollution covering about 10 million square kilometers of the tropical Indian Ocean -- roughly the same area as the continental United States. The finding raises serious questions about what impact the extensive pollution is having on climate processes and on marine life in the ocean below.

The scientists are participating in the Indian Ocean Experiment (INDOEX), a \$25 million project, sponsored in part by the National Science Foundation, to investigate how tiny pollutant particles called aerosols are transported through the atmosphere and their effect on climate. The team of scientists was shocked by the extent of pollution they encountered during the six-week field experiment that began in early February and continued through the end of March 1999. "There was a brownish haze layer all over the Indian Ocean almost 1,000 miles off the coast," he said. "That was what really stunned us -- how pervasive these aerosols were and how they could survive at such long

distances from where they originated." The INDOEX scientists reported finding a dense, brown haze of pollution extending from the ocean surface to altitudes of 2 miles in the air.

The haze layer covered much of the research area almost continually during the six-week experiment. The affected area includes most of the northern Indian Ocean, including the Arabian Sea, much of the Bay of Bengal, and spills over into the equatorial Indian Ocean to about 5 degrees south of the equator. "It appeared as if the whole Indian subcontinent was surrounded by a mountain of pollution," agreed Ramanathan. "At times, we couldn't even see the low clouds because the haze layer was so thick."

The haze is caused by high concentrations of small particles known as aerosols that are usually less than a few micrometers in diameter. Comprised primarily of soot, sulfates, nitrates, organic particles, fly ash and mineral dust, the particles often reduced visibility over the open ocean. The haze layer also contains relatively high concentrations of gases, including carbon monoxide, various organic compounds, and sulfur dioxide, providing conclusive evidence that the haze layer is caused by pollution. "There is little doubt that future levels of pollution from India and other nations bordering on the Indian Ocean region are going to grow substantially in the future."

Note: The Indian Ocean borders with south and west Australian and half of the north.

Australia did not participate in this research and has made a point of ignoring it since.

Asia and the Indian subcontinent, which together have a population of more than 2 billion people, emit large quantities of pollutants that can be carried to the Indian Ocean during the northern hemisphere winter by monsoon winds from the northeast. "If you cut the amount of sunlight going into the ocean, you will also impact the amount of moisture evaporating from the sea surface either regionally or globally and, consequently, the amount of rainfall that will be generated," Ramanathan said. "So the entire hydrological cycle is being perturbed."

A reduction in the amount of sunlight reaching the ocean surface can also have a detrimental effect on plant life that depends on photosynthesis, including plankton, which provides a key link in the marine food chain. Early results indicate that the pollutants play a dual role in that they have both warming and cooling effects. The tiny particles produce a cooling effect in that they scatter sunlight back to space. By acting as seeds for cloud condensation, they also produce an indirect cooling effect by increasing both the longevity and reflectivity, or albedo, of clouds. The pollutants have a warming effect, however, in that they absorb a large amount of sunlight. The airborne particles over the northern Indian Ocean are unusually dark because they contain large amounts of soot and other materials from incompletely burned fuels and wastes. Dark aerosols lead to the increased absorption of solar radiation.

"The soot contributes a substantial amount of heating of the atmosphere, but it also reduces the amount of sunlight reaching the ocean," Ramanathan said. "So, it is just too early to say at this point whether the net effect is one of cooling or warming." The dark airborne particles over the Indian Ocean appear to be markedly different from those over North America and Europe, where advanced pollution control technologies remove much of the dark material and yield particles that are relatively brighter. "What INDOEX has pointed out very dramatically is that the long-range transport

of aerosols can be extremely important and that we should be looking more closely at what impact this is having on global climate."

It should be noted that Professor Ramanathan, a believer of greenhouse warming, was able to see outside the square and reported to his fellow scientists his concern of this momentous discovery calling on them to action its elimination, but his appeal went unheeded.

The findings of INDOEX was further marginalized by UNEP in 2002 when, after confirming the importance of the discovery, elected for modelling studies to be used rather than actual data

Independent of INDOEX there has developed a belief the thickening brown cloud could trigger significant changes in long-term weather patterns that would affect areas thousands of kilometres away.

It is contended these impacts are being suffered badly by Australia.

Professor Ramanathan is of the opinion the cloud's effect will be felt most further south of its discovery point, one such example being the southern movement, now offshore below land, of the rain band normally depended on by the southern regions of our continent.

The purpose of this submission is to draw the public attention to a very important, but unreported event which is devastating our nation.

If what is reported here is accepted as being part of the real cause of drought an understanding of how to address the issue will be the start of eventual elimination of this undesirable phenomenon.