

# THE CHINESE EFFECT\* PART 2

## Its impacts on the Indian Ocean Dipole (IOD)

By Kevin Long 15.4.2009 www.thelongview.com.au

\* the annual build-up of warm seas north of New Guinea due to Asian aerosol pollution  
as identified in my original document "The Chinese Effect" (2006)

Two sources of evidence now support the hypothesis that "The Chinese Effect" is **the major tipping force** responsible for climate change in south-eastern Australia.

1. A 2009 study showing reduced rain from the IOD weather system since 1992
2. A 2008 pollution study on climate impacts of "atmospheric brown clouds" (ABCs)

Also the suspected slowing of the "Great Ocean Conveyor Belt" current may be contributing to the build-up of "The Chinese Effect" and rainfall reduction from the IOD.

### RESEARCH ON HOW THE IOD CYCLE INFLUENCES CLIMATE

A 2009 scientific research paper indicates that the IOD has a greater influence than the La Nina system on the climate of south-eastern Australia.

See: Ummenhofer et al 2009 "What causes southeast Australia's worst droughts?" Geophysical Research Letters, Vol. 36

As its name suggests the IOD has two modes (i.e. "di-pole"). The "positive IOD" mode usually provides south-eastern Australia with below-average rainfall; whereas the "negative IOD" mode usually provides south-eastern Australia with above-average rainfall.

**The paper highlights that since 1992 the IOD has been mostly locked out of the "wet mode"; unable to maintain for extended periods the conditions that produce above-average rainfall for south-eastern Australia.**

### "THE CHINESE EFFECT" REDUCES RAIN YIELD OF THE IOD

The above research paper failed to attribute a cause for the evolving IOD pattern.

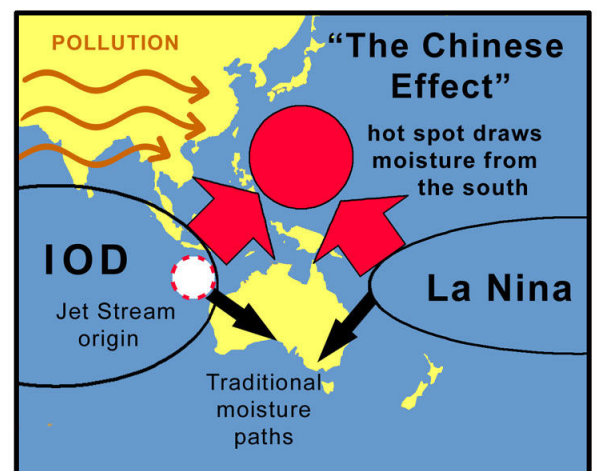
I believe that the reducing rain yield of the IOD for south-eastern Australia is a direct result of "The Chinese Effect".

It is shown in sea-surface temperature records that above-average rains are received in south-eastern Australia predominantly when the seas north of New Guinea are about two degrees below-average. "The Chinese Effect" now keeps that area about two degrees above-average.

The extra heat of "The Chinese Effect" promotes north-traveling, cross-equatorial winds that cool the sea surface to the north-west of Australia.

Thus, the usual amount of atmospheric moisture is no longer available to feed the northwest Jet Streams. This moisture would normally provide a major proportion of the moisture for south-eastern Australia.

**From this sequence it is clear that "The Chinese Effect" is at the very least shaping – if not entirely dominating – the evolving IOD pattern.**



The IOD and La Nina systems have traditionally delivered tropical atmospheric moisture to south-eastern Australia, via the Jet Streams from the north-west and the low-pressure systems on the east-coast. IOD and La Nina are loosely coupled and predominantly operate on a four-year cycle.

## THE IMPACTS OF ASIAN AEROSOL POLLUTION ARE NOW RECOGNISED BY U.N.

As stated in "The Chinese Effect" (2006), I believe the anthropogenic pollution from China and India is the primary force causing the above-average sea surface temperatures in the area north of New Guinea, thus driving the climate changes in Australia as described above.

A 2008 study by the United Nations highlights the growing aerosol pollution from major Asian cities in the form of "Atmospheric Brown Clouds" (ABC's). These ABCs have been rapidly increasing in recent years and present a major threat to climate stability, agriculture, water resources and food security.

See: United Nations Environment Program 2008 "Atmospheric Brown Clouds: Regional Assessment Report with Focus on Asia"

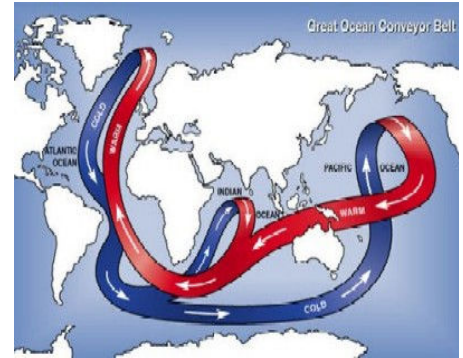
## EMERGING ROLE OF "GREAT OCEAN CONVEYOR BELT"

I now highlight a second force (other than pollution) that appears to be increasing sea temperatures to the north of New Guinea.

Unprecedented rates of Northern Hemisphere ice-melt in the last five years are reducing ocean salinity levels and increasing the likelihood of a slow-down in the "Great Ocean Conveyor Belt".

I believe this is already occurring.

In my opinion, (due to evident warming of "The Chinese Effect") the Great Ocean Conveyor Belt has already lost some of its ability to shift warm water from north of New Guinea through the Indonesia islands to the area to the north-west of Australia.



Thus jet stream moisture is being reduced, further reducing rainfall in south-eastern Australia.

## CLIMATE CHANGE IMPACTS ON CENTRAL VICTORIA

Central Victoria's decadal rainfall averages have declined by 33% since the peak decade of the 1970's. Since 1992, the dominant four-year IOD / La Nina cycle of rainfall variation has been "flattened out" by "The Chinese Effect". Generally in Central Victoria there has been a reduced swing between dry and wet years (e.g. pre-1993 a swing from 50% of average rain to 150% of average rain was normal). During the last decade the swing has been limited to a general range of 50-100% of average rain.

The loss of the above-average rainfall has slashed reservoir inflows by approximately 90%, thus rendering the concept of irrigated agriculture unreliable and unviable.

During the last eight years in Central Victoria, Autumn and Spring have suffered the greatest losses of rainfall (i.e. seasonal reductions - Autumn 42%, Winter 22%, Spring 29%, Summer 6%)

These seasonal losses of rainfall have progressively reduced the overall growing season to a point where most agriculture - particularly cereal cropping - is no longer viable.

## CONCLUSION

Given the increasing pollution that is now occurring in Asia, "The Chinese Effect" can only be expected to strengthen during the next decade. Therefore south-eastern Australia should expect a continuation of the reducing rainfall trends of the last 35 years - well into the foreseeable future. Furthermore there is currently no evidence to suggest that the IOD will return to the old cycles which provided the regular above-average rainfall of past years.

**My prognosis of this situation is that - due to the intensifying forces of "The Chinese Effect" - the Indian Ocean Dipole will remain "locked out" of the extended wet mode cycles for at least the next decade.**

This means surface water and food security for south-eastern Australia will become a distant memory. I forecast that we are heading for another decade of dry weather without equal.

Regards, Kevin Long.

See my website for original document "THE CHINESE EFFECT" and further references on the IOD and "Great Ocean Conveyor Belt". See also the latest long-range forecast and tracking of "The Chinese Effect".