

## Climate Change in Disarray – An African Perspective

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### EXECUTIVE SUMMARY

Will Alexander is an Emeritus Professor of Civil and Biosystems Engineering at the University of Pretoria, South Africa. His career has focused on water engineering, the discipline devoted to supplying civilization with clean and adequate water supplies.

After a long and distinguished career in that field, Professor Alexander is well placed to evaluate the effects of climate change on water supply against claims that man-made warming will lead to catastrophic consequences for our ability to sustain life. His chief findings are:

- Neither African floods nor droughts have increased in the period that climate change is alleged to have happened.
- Prof. Alexander's research team has found wet and dry years correlate much better to movements in the solar system and activity on the sun itself rather than and man-made climate change hypothesis.

One of the greatest weaknesses in the arguments put forward by the man-made global warming lobby is that the projections of extreme weather events and the effects on agriculture are not firmly linked to projections of temperature change. Prof. Alexander tested the alleged consequences of climate change on the environment, and he has found that the hypothesis just does not pan out.

### INTRODUCTION – THE COLLAPSING ARGUMENT

There is an increasing, almost hysterical pressure on all the countries of the world, especially the major developing countries, China, India, Brazil, and to a lesser extent South Africa, to adopt costly measures to reduce undesirable greenhouse gas emissions. This can only be achieved by reducing energy usage, particularly from coal-fired power stations.

The fundamental argument is that these emissions cause global temperatures to rise. These, in turn, will result in increases in major climatic extremes – floods and droughts, as well as threats to water supplies, desertification, and damage to the natural environment, including the loss of valuable plant and animal species.

The proponents for this view are using these environmental concerns to influence the public and political decision makers. There is no harm in this. Indeed, environmental scientists are already involved in losing battles to limit environmental damage that is the inevitable result of population growth and associated societal and economic developments. In this situation, the threat of the environmental consequences of global warming are useful in arguing their case for limiting action that can cause environmental damage.

However, this holds considerable dangers to the credibility of the majority of conscientious scientists in these fields. The climate alarmists are making extravagant and easily refutable claims. They are antagonizing those of us in the engineering and applied sciences whose concern for the environment is no less than those who are in the natural sciences. We are systematically vilified in the press and recently in scientific publications.

I have no wish or intention to be party to these practices. They can easily degenerate into a situation that divides scientists into two opposing camps at a time when South Africa urgently needs co-operative, multidisciplinary, multi-institutional efforts to solve its many environment-related and other problems.

There is a distinct possibility that the whole climate change issue will fade into history before the end of his year. The reasons are two-fold: Despite 20 years of international research, climate alarmists are unable to produce evidence of

large-scale, deleterious consequences of the rising global temperatures. The second is that developing nations, including South Africa, are unlikely to implement measures based on unproven science that must inevitably damage their economies at the expense of the urgently needed poverty alleviation measures.

## Climate Change and African Poverty

My son who is working on a project in northern Namibia sent these photos. One can easily compare them with those pictures of starving African children that climate alarmists produce to further their cause.



It is our responsibility to recommend and support action to improve the quality of life of the peoples of the African continent. This includes raising their economic status to the point where they can afford motor transport. Now, northern hemisphere alarmists and their South African counterparts are recommending action that will have the opposite effect. They argue that emissions from motor transport will contribute to increases in global warming and their use should be discouraged.

These alarmists should be informed that their actions and recommendations are reprehensible and unacceptable.

This young girl below told my son through an interpreter that he was the first white person that she had seen. She was carrying her valuable shoes instead of wearing them. Climate alarmists sitting behind their desks at the foot of Table Mountain have no concern for the welfare of the many millions of poor but proud people of Africa.



## **CHALLENGING DOOMSDAY**

Mix Al Gore, polar bears, Kilimanjaro, Katrina, the Royal Society, the *Stern Review*, the 2000 IPCC scientists, and what do you get? – the end of the world. Should we in Africa start digging our graves or make reservations at the crematorium? Or should we challenge the doomsday scenarios?

As conscientious scientists, we have a responsibility to examine the basis for this alarmism, notwithstanding the edicts of the Royal Society. We in South Africa are in an ideal position to do this. We have a wide range of climatic conditions from winter rainfall in the south to summer rainfall over most of the country. We experience occasional tropical cyclones in the northeast, and we have the world's oldest desert in the northwest. We have a very good meteorological and hydrological gauging network extending back for more than 100 years at some sites and more than 70 years at many others.

We note that the alarmist theories have as their basis the increasing global atmospheric temperatures. From this increase, northern hemisphere scientists proceed via mathematical global climate models to the causes and consequences of global warming. The causes are of little more than academic interest in this part of the world. It is the postulated, that is, unproven consequences that are of interest. These are the predicted increases in climatic extremes, principally floods and droughts. These, in turn, pose the threat of loss of life and property as well as the threat to our already scarce water resources. Further down the scale is the threat of severe damage to our natural environment and its unique variety of flora and fauna, of which we are justifiably proud and protective.

A good place to start our evaluation is the repeated claim that global atmospheric temperatures during the past decade were higher than at any time during the past centuries and are still rising. If there is indeed a link between global temperatures, floods and droughts, then this should be readily apparent in the data recorded and published by the responsible national agencies.

### **FLOODS HAVE NOT INCREASED**

In many regions of South Africa, the highest floods were in the mid-1800s. In April 1856, the Mgeni River burst its banks and flowed across Durban and into the harbour. Many other coastal rivers experienced their historic maximums during this season. It is very interesting to note that the highest flood recorded on the abutment of the bridge across the Loire River in Orleans, France, occurred two months later in June 1856. These events were concurrent with the sunspot minimum that occurred in December 1855. Were these three occurrences purely chance-related? We can demonstrate otherwise.

All South African dams are designed to withstand the regional maximum flood (RMF). The RMF is based on an upper envelope of maximum floods recorded in the region, which are well documented in design manuals. No flood during the past decade exceeded the RMF. There is no statistically believable evidence of major increases in floods in sub-Saharan Africa in recent years despite increases in global temperatures.

### **DROUGHTS HAVE NOT INCREASED**

The next issue is the claim that global warming will result in an increase in the occurrence of droughts. Concerns relating to droughts are as old as civilization itself. They are well documented in the early scientific literature.

Soon after WWII, there was an international realization that many regions of the world faced serious water shortages that resulted from increased water demands arising from growing populations, increased industrial activity, and better living standards, viewed against the background of recurrent droughts. There was a huge hydrological interest. There were hundreds of papers in refereed journals and many discussions at South African and international conferences on issues relating to the numerical characterization of river flow. This was essential for the optimum development of the diminishing availability of unexploited resources. Climate change scientists have completely ignored this incredible wealth of hydrological information and corresponding understanding of basic climate-related processes.

Extensive national drought investigations and commissions of inquiry in South Africa during the past century demonstrated that there is no statistically believable evidence of increased droughts during the period of record through to the present day.

### **NATURAL DISASTERS HAVE NOT INCREASED**

This is a subject of deep personal concern. For the past fifteen years, I have been closely involved in all aspects of natural disasters: discussions with the affected communities, discussions and co-operation with the local authorities, discussions with national agencies, presentations at national and international conferences, training courses, and I had a



membership in the highest international authority, the United Nations Scientific and Technical Committee on Natural Disasters, from 1995 through to the end of 2000.

Our first and most important task was to determine if the increase in loss of lives and property during natural disasters was a consequence of increases in the hazards themselves, especially floods and droughts. We could draw on the experiences of the national agencies that had direct contact with the affected communities and the local experts.

Our conclusion was unequivocal. There were no reports of increases in the frequency of the hazards in any African countries. It was obvious that the increases in damage were due to increasing vulnerability to the hazards and not to increases in the magnitude of the hazards. I described this in my report titled *Risk and Society, an African Perspective*, which was commissioned by the United Nations body.

It is important to note that the national agencies had every incentive to identify the causes of the increase in damage, and they would not have hesitated to report increases in the magnitude of the hazards had this been the case. Not a single African country identified global warming as an issue of concern.

## **TEMPERATURE INCREASES ARE IRRELEVANT**

The claimed increases in surface air temperature resulting from global warming are less than those between having breakfast and taking morning tea on a sunny day. In our part of the world they are also considerably less than those experienced when moving in and out of the shade on a cloudless day.

There is no evidence of regional scale environmental damage resulting from these very small temperature increases. On the contrary, during 2006, virtually the whole of the African subcontinent from Angola and Malawi southwards was greener and wetter than at any time in human memory. This was despite claims that future climate would become warmer and drier and that this would result in the desertification of the subcontinent and the wholesale destruction of plant and animal life.

## **SOLAR LINKAGE**

One very important issue has to be resolved. It is the relative roles of human activities and natural solar radiation on climate. The synchronous linkages between regular and, therefore, predictable changes in regional rainfall and river flow with sunspot cycles were first reported in South Africa in 1889, more than a hundred years ago. However, Lord Kelvin in his presidential address to the Royal Society three years later discredited the influence of variability in solar activity on climate. He maintained that the variations in received solar energy were too small to have any meaningful effect. This remains the view of climate change scientists to the present day.

This response is wholly unscientific. Evidence of a synchronous linkage between sunspot activity and alternating, multi-year, wet and dry periods is overwhelming. It dates from biblical times through to the present day. My comprehensive analyses of a very large hydrometeorological database demonstrated that the regional rainfall and river flow data exhibited a statistically significant 21-year periodicity that was synchronous with the double sunspot cycle. There was no statistically significant 11-year periodicity. This was because the sunspot numbers in the alternating sunspot cycles were different. They were synchronous with the alternating wet and dry periods in the hydrometeorological data. There was an urgent need to identify the physical processes in solar activity that were responsible for the synchronous behaviour.

Six of us accepted the challenge: three civil engineers, one chemical engineer, one geohydrologist, and most importantly, one retired naval architect. Three of us are from South Africa, two from the United Kingdom, and one from the Republic of Ireland. We come from different professional backgrounds and we analyzed different data sets using different methodologies. We corresponded via the Internet.

Our problem was difficult as it involved the visualization of the four-dimensional movement of the solar system through galactic space. We solved the problem of identifying the causal linkage between variations in solar activity and synchronous variations in the hydrometeorological processes.

Very briefly, there are three centres of mass that are of interest: the sun, the major planets, and the solar system. Once every eleven years or so, the four major planets are grouped ahead of the sun as the solar system moves through galactic space. This causes the sun to occupy a reciprocal position on the opposite side of the solar system's centre of mass. About eleven years later, the major planets are grouped behind the sun causing it to occupy a reciprocal position ahead of the solar system's centre of mass.

The sun, therefore, alternately accelerates as it moves forward through galactic space and then decelerates to occupy a position behind the solar system's centre of mass. All this occurs while the solar system as a whole moves forward through galactic space.

The acceleration and deceleration cause the sun to wobble in its path. This feature is well known to astronomers. The wobble, in turn, creates indigestion in the sun's interior, which is characterized by changes in sunspot activity and other phenomena.

What is very important, and makes our studies unique, is that this acceleration and deceleration and the resultant changes in sunspot numbers are synchronous with the alternating, predictable, multi-year, wet and dry sequences that characterize our climate. Despite a diligent search, we were unable to find any anomalies or trends in the data that could be attributed to human activities.

Our studies are based on data obtained from the responsible national agencies. Our calculations are reproducible by anybody with sufficient knowledge and patience. Our paper has passed the review process and is due for publication in June, coincidentally with the publication of the IPCC's full report and the G8 meeting.

### **WHAT NOW?**

The establishment of the IPCC nearly 20 years ago arose from the genuine concern of many scientists that the continued discharge of undesirable greenhouse gasses into the atmosphere could, over a period of time, have serious, deleterious effects on the world's climate. Now, after a massive research effort, the IPCC has yet to produce its final report. Obviously, something is amiss.

### **DISHONEST SCIENCE**

Acting under political pressure of their own making, northern hemisphere scientists have allowed themselves to be forced into a claustrophobic position from which there is no escape. They are desperately trying to persuade the rest of the world of the devastating terrestrial consequences of global warming. In the absence of believable evidence of the claimed consequences, they are engaging in the dangerous practice of attempting to suppress all research that questions human causality.

The reprehensible edicts of the Royal Society, the patently dishonest *Stern Review* and the pompous attempts to prevent the distribution of the DVD on the climate change swindle are evidence of the desperate situation in which the doomsday advocates find themselves.

Taking a broader view, if the developing nations of the world refuse to implement the costly emissions control measures, the forthcoming G8 meeting fails to convince them otherwise, and continuing research succeeds in demonstrating that variations in solar activity, and not human activity, are the dominant cause of climate variability, thereby exposing the dishonest science, then the whole climate change issue must collapse like a pack of cards.

### **BROKEN PROMISES**

The developing countries of Africa with their fragile economies have repeatedly called for trade, not aid. Promises of assistance for the implementation of emissions control measures that were made at Gleneagles have not been fulfilled. Technical assistance is not feasible, as Africa does not have the expertise to implement it. Financial assistance is vulnerable to corruption by both donor and recipient agencies. The World Trade Organization has failed in its attempts to lift trade restrictions imposed by affluent countries. In a recent development, some UK organizations have reduced the importation of perishable agricultural products from Africa by air using the excuse that this will reduce air pollution.

Now, the developed countries have the audacity to expect African countries to bow to their pressure based on corrupt science and broken promises of aid, in order to save the world from their imaginary doomsday scenarios. We are not that stupid.

## **About the Author**



WILL ALEXANDER is Professor Emeritus of the Department of Civil and Biosystems Engineering at the University of Pretoria and Honorary Fellow of the South African Institution of Civil Engineering. He spent the last 35 years of his career actively involved in the development of water resource and flood analysis methods as well as in natural disaster mitigation and climate change studies. He has written more than 200 papers, presentations, and books on these subjects. He has also presented short courses to some two thousand practitioners during this period.