

**Memo 02/12**

## **Climate change science is an unverified hypothesis. Part 2**

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**These two photographs of arid area succulents were taken hundreds of kilometres apart in different climatic regions. There is no evidence of damage caused by climate change.**

The material in this memo arises from the invitation to participate in a short course on *Flood hydrology and climate change impacts* presented by the Department of Continuing Education of the University of Pretoria. I made my two extensive publications available to course participants. The first was my *Handbook on analytical methods for water resource development and management*. It has 25 chapters (718 pages); 22 appendices (495 pages); 12 PowerPoint presentations (740 slides). The other was my technical report titled *Climate change and its consequences -- an African perspective* distributed in 2007. It has 11 chapters (337 pages); eight appendices (216 pages) and seven PowerPoint presentations (452 slides).

The tables of contents of these two publications are attached to this memo together with Chapter 4 *Climate and solar activity* and Chapter 10 *Climate, the natural environment and agriculture* of my technical report.

### **Hypothesis verification**

Refer to my article *Climate change science is an unverified hypothesis* in Memo 01/12 of 9<sup>th</sup> January. I submitted it to the editor of the South African Journal of Science (SAJS). It was rejected. I needed the editor's reasons for the rejection of my submission as it was directly relevant to my presentations at the course. I am grateful for his immediate response. Our

differences of opinion provide a valuable insight into the complexities of the whole climate change issue.

The IPCC is in the process of preparing its fifth assessment report that is due for publication in 2013/14. It will no doubt follow its previous policy of relying almost exclusively on peer reviewed papers published in scientific journals.

While this policy is understandable, problems arise when dealing with the consequences of climate change. These consequences are in the fields of the applied sciences especially the engineering and environmental sciences. As a result, the climate change studies require a multidisciplinary approach and vigorous debate as clearly set out in the UNESCO/IUGG *Declaration on science and the use of scientific knowledge*.

This is the sequence of interest.

- Emissions of carbon dioxide create a greenhouse effect.
- The greenhouse effect causes global temperatures to rise.
- Increased global temperatures will result in increases in damaging floods, droughts and damage to the natural environment.

**[Just as I was writing this memo, reports came through the Internet that the UK Met Office has just acknowledged that there has been no global warming since 1997. This was confirmed by the University of East Anglia's Climate Research Unit. This is a critical step in the above analytical sequence. It explains why we have been unable to detect any changes in the hydrological or environmental processes described in this memo. The University of East Anglia's confirmation was no doubt to forestall another Climategate scandal. ]**

Accommodating floods and droughts has been an engineering problem since the beginning of civilisation. I have been very active in research in this field together with staff, students and professional colleagues for a number of years. The following summarises the results of our studies.

1. There were no undesirable changes in the hydrological extremes (floods and droughts) during the period of record despite steady increases in greenhouse gas emissions.
2. The effects of climate change on the hydrological processes can only be determined by analyses of the historical data and extrapolation into the future, with the postulated consequences superimposed.
3. There was a statistically significant (95%) predictable periodicity in the hydrological data other than the open water surface evaporation data.

4. There was a very clear synchronous linkage between the natural multi-year variations in the hydrological processes and sunspot activity. This was first reported in South Africa more than 100 years ago. It is associated with the double sunspot cycle, not the single 11-year cycle.
5. There was no evidence of damage to the flora and fauna on a regional scale in southern Africa.

These findings completely undermine climate change theory. This led to my submission that climate change science is an unverified hypothesis. This conclusion is based on the fact that there is no successful verification of the predicted consequences.

### **Editor's response**

I am very grateful for the editor's detailed response. The following comments are in no way a personal criticism. The editor was obviously not aware of the information contained in the two attached chapters of my technical report.

He maintained that my first point regarding no detectable increases in floods and droughts was not valid on the basis that I did not provide supporting publications by other authors. The same applied to the observed multi-year predictable periodicity in the data.

This was his response to my insistence that predicted changes in the climatological processes can only be achieved by studying past conditions and extrapolating them into the future, with the postulated consequences of climate change superimposed.

The contention that "determination of likely future conditions can only be achieved by studying past conditions and extrapolation into the future" is clearly false in the context of climate change. Climate change theory holds that changes will be rapid, and that predicting the future from past variation would be invalid. It would therefore be necessary to go beyond the simple extension of the past into the future, and to develop models that could predict changes that would not be found in the past record.

No civil engineers will agree with this contention. How can this approach be implemented in practical situations? This leaves the door wide open for climate change scientists to claim that any extreme event is the consequence of climate change without having to consider it in relation with historical data.

His comments on the solar linkage were very informative. These were his comments in his own words.

The statement that historical and recent studies demonstrate that the influence of solar energy is the dominant cause of variability is backed up by references to several of your own papers, but no others. The latest IPCC models have accounted for solar influences, and they explain only a small proportion of the variability. These would need to be cited, with a reason for your dismissal of them.

To quote Shakespeare, *Herein lies the rub*. Climate change scientists dare not admit the dominant role of solar activity in global climate because it nullifies their claims of human causes. Our thorough and detailed studies are irrefutable. In some aspects they were a world first. We in South Africa are leaders in this field but we cannot get our message across without having to comment on the groundless studies by others.

I deal extensively with the solar influence in both the handbook and the technical report. The 51-page Chapter 20 of the handbook on this subject has 29 references. The PowerPoint presentation has 53 slides. Chapter 4 of my technical report is titled *Climate and solar activity*. It also has a PowerPoint presentation on the subject. The IPCC's statements are without foundation in science (corrupt in my view).

Basic science requires that prediction methods be verified by comparing their outputs with recorded data. Remember how the tree ring data were manipulated to accord with theories by the scientists involved in the Climategate scandal based on the infamous hockey stick curve? I provided all the data used in my analyses in my publications – eleven thousand years of it from eight different processes and 200 sites.

I disagree altogether with the statement that predicting the future from past variations would be invalid. The issue is climate **change**. How is it possible to determine changes **without studying the historical records in the first instance**? Our comprehensive studies demonstrate without any doubt at all that the **only** method for predicting future climate has to be based on analyses of past data and its projection into the future upon which changes have to be superimposed. This methodology is described extensively in my handbook. The prediction methods used by climate change scientists rest on unverified hypotheses, without any points of departure.

Regarding my statement that there was no evidence to support claims of environmental damage in southern Africa, this was his response.

The statement that no environmental damage could be found is supported by the inclusion of a map of routes travelled, and a statement that “there are few, if any scientists in southern Africa who have a wider, longer, and more scientific experience” (than yourself). No timeframe for these travels is given, and there is no reference to published studies that document the lack of impact. The statement is therefore simply an opinion, and apparently not an opinion informed by careful science.

The inclusion of Figure 3 (a picture of Aloe species in Namibia), in support of the contention that they are healthy, is contrasted by carefully documented observations by Foden et al. that show that climate change is having a real effect on these populations. To refute the findings of Foden, if indeed they can be refuted, would require a much more detailed study than casual observation. To simply invite the reader to believe you, on the basis of your experience as a hydrological engineer, is inadequate (see Wendy Foden, Guy F. Midgley, Greg Hughes, William J. Bond, Wilfried Thuiller, M. Timm Hoffman, Prince Kaleme, Les G. Underhill, Anthony Rebelo, and Lee Hannah (2007). A changing climate is eroding the

geographical range of the Namib Desert tree Aloe through population declines and dispersal lags. Diversity and Distributions 13, 645–653.)

The editor conveniently omits reference to the book on *Succulents of South Africa* by van Jaarsveld, van Wyk and Smith with its repeated statements on the resilience of these species to drought conditions and erratic rainfall. The assumption that increases in temperatures of a few degrees Centigrade will damage these arid area species considering the wide range of daily temperatures in desert conditions, is nonsensical. My two photographs above were taken hundreds of kilometres apart in different climatic regions. The quiver trees in the first photograph are prominent, long-lived features of the desert landscape. I never encountered a single dead quiver tree in my travels.

I offered to supply my set of photographs each with the time, date and geographical coordinates to the SA National Biodiversity Institute but my offer was ignored. Perhaps the editor may consider contacting the SANBI and ask them for their reasons for ignoring my offer before making statements about the lack of this information in my submission.

The editor's views above are unscientific. All that is necessary to disprove a theory is to disprove the predictions based on it. It is not necessary to disprove the theory itself. My overall conclusion that climate change science is an unverified hypothesis is based on the lack of supportable predictions. This is a solidly based scientific requirement. This is not the first time that the SAJS has refused to publish contrarian views on the most important scientific issue of our times.

## Presentations

My oral presentations were based on PowerPoint slides but equally important, the participants were provided with hard copies of my handbook on *Analytical methods for water resource development and management* which includes details of the solar linkage analyses. The participants were also provided with a flash drive containing both the handbook and my technical report *Climate change and its consequences -- an African perspective*. I have attached the tables of contents of these two documents to this memo.

The course notes including these two substantial reports will be available on the University's website. I will provide details when they become available.

Returning to the environmental damage issue, my presentation was based on a PowerPoint presentation with more than 100 slides on the environmental aspects covering a wide region of southern Africa. Had I seen an example of damage that could be attributed to climate change I would not have hesitated to photograph it. I was unable to find any. I am not a biologist but I am also not stupid. I spent the first 20 years of my professional life building water supply projects in the dry areas of South Africa.

Chapter 10 of my technical report deals extensively with this subject. I have attached a copy. I urge you to study it in the light of the editor's comments. It has frequent references to studies of the succulent species. I specifically comment on and reject the researchers' conclusions that these species are endangered. There is simply no evidence to support their theories.

Let me ask a simple question. Why have the environmentalists not identified regions where climate change has caused environmental damage so that the public and other scientists can examine them and draw their own conclusions?

I also drew the participants' attention to several photographs of palaeo wetland sediment deposits and asked the question why have our biological scientists not examined these deposits as indicators of past climates? I also drew their attention to the lack of any indications of damage to the natural vegetation in the wide range of climatic regions of southern Africa. Once again, it is not necessary to refute a theory when there is no evidence to support it.

Please note that in no way was I attempting to discredit the views of other scientists. I was simply looking for evidence of damage. Had I found it I would not have hesitated for one moment to report it as this was my duty. The SANBI is fully aware of my studies in this field but has steadfastly refused to participate in round-table discussions. The reasons are obvious.

## **General conclusions**

My fundamental conclusion is that there is absolutely no evidence to justify any policy that recommends that South Africa or any other country in sub-continental Africa should take costly measures to control the emissions from our power stations, heavy industries or other sources. There is absolutely no evidence that justifies this policy and its inevitable adverse effect on the national economy and the lives and livelihoods of the poor and disadvantaged peoples of Africa.

Editors of scientific journals should become more familiar with the basic concepts of hypothesis verification requirements as well as the scientific requirements set out in the UNESCO/IUGG *Declaration on science and the use of scientific knowledge*.

## **The future**

I hope that I am wrong but I believe that it is most unlikely that the next IPCC assessment report will meet the requirements as clearly set out in the UNESCO/IUGG *Declaration on science and the use of scientific knowledge*. I have not seen a single reference to this document in the IPCC literature. The editor did not mention it. I include it in one of the appendices of my handbook.

Instead, the IPCC will probably continue to rely on peer reviewed papers that support climate change theory and omit all contrarian views. This is a dangerous philosophy as in future the

scientists in the applied sciences will provide mounting proof that the alarmist predictions have no scientific substance. The South African engineering professions have already expressed their scepticism.

## **Appreciation**

I express my sincere appreciation to the editor of the SAJS for his comments although I disagree with many of them. They allowed me to express my opposing views on this contentious and nationally important subject. I also appreciate the hard work by Marco van Dijk and Prof Fanie van Vuuren for their preparations for the course including the compilation, printing and digitisation of all the course material and making it available on the university's website. In the background were all the arrangements made by the university's Department of Continuing Education.

## **Words of wisdom**

In lighter vein, during the tea breaks the sugar was served in Hulett's well known sachets, each with different words of wisdom. One of mine had the following quote attributed to Mahatma Gandhi:

*Live as though you were to die tomorrow.  
Learn as if you were to live forever.*

My great grand-mother saved Gandhi's life when he was about to be stoned by an unruly mob as he walked down West St in Durban. She opened her umbrella and escorted him to the nearest police station. We have gold fob watches presented to my great grandparents by a grateful Indian community.

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Attached files:

- Handbook table of contents
- Technical report table of contents
- Chapter 4 on climate and solar activity
- Chapter 10 on climate and the natural environment