

## Newsletter: August 2015

### Contents

Islamic Declaration urges fair and equitable action on climate change

Guest Article : A key culprit in South Africa's looming water crisis

South Africa's proposed INDC under review

Climate News

### Islamic Declaration urges fair and equitable action on climate change

By Rehana Dada

An Islamic Declaration on climate change, formulated by faith leaders, policy makers and academics, was released this month, following a symposium in Istanbul.

*Photograph by Siyabonga Myeza*



*He raised the heaven and established the balance,  
So that you would not transgress the balance.  
Give just weight – do not skimp in the balance.  
He laid out the earth for all living creatures.*

*(Qur'an 55: 7-10)*

The Declaration was conceived in recognition of the role that faith communities can play in creating “a fairer, safer, cleaner world built on renewable energy”. It acknowledges that the pace of climatic change that is currently occurring is faster than ever before, and a result of human activities. It goes on to outline the risks that climate change presents to ecosystems and people, based on IPCC findings, concluding that “there are serious flaws in the way we have used natural resources – the sources of life on Earth”.

Photograph by Noel Oettle



*We are but one of the multitude of living beings with whom we share the Earth;*

*We have no right to oppress the rest of creation or cause it harm;*

*Intelligence and conscience behoove us, as our faith commands, to treat all things with care and awe (taqwa) of their Creator, compassion (rahmah) and utmost good (ihsan).*

**Quote from the Islamic Declaration on Global Climate Change**

The Declaration calls for an equitable and binding agreement in Paris this year, referring to the “enormous responsibility the COP shoulders on behalf of the rest of humanity, including leading the rest of us to a new way of relating to God’s Earth”. Well-off nations and oil-producing states are called on to take the lead in phasing out carbon emissions by mid-century, as well as provide the financial and technical support needed by developing nations in their mitigation efforts. Wealthier nations are also called on to “recognize the moral obligation to reduce consumption so that the poor may benefit from what is left of the earth’s non-renewable resources”.

The people and leaders of all nations are encouraged to commit to renewable energy and/or a zero emissions strategy and to “set in motion a fresh model of wellbeing, based on an alternative to the current financial model which depletes resources, degrades the environment, and deepens inequality.” Prioritisation of adaptation efforts is emphasised, as well as support for vulnerable countries and groups.

The private sector is urged to “shoulder the consequences of their profit-making activities”, “change from the current business model which is based on an unsustainable escalating economy”, “pay more heed to social and ecological responsibilities”, and “assist in the divestment from the fossil fuel driven economy and the scaling up of renewable energy and other ecological alternatives”.

The Declaration was finalised at a symposium in Istanbul in mid August, attended by senior policy makers, academics and faith group leaders. A draft had been circulated widely for consultation prior to the symposium. Speakers included Ibrahim Thiaw of United Nations Environment Programme, Saleemul Huq of International Institute of Environment and Development, Mohammed Adow of Climate Action Network International, Mohamed Ashmawey of Islamic Relief Worldwide, and a number Ulema leaders.

**The Islamic Declaration on Global Climate Change is available at <http://islamicclimatedeclaration.org/islamic-declaration-on-global-climate-change>**

---

## Introduction to guest article

From 7-11 September 2015, the World Forestry Congress will take place in Durban, bringing together commercial, government and intergovernmental interests in the industry. In parallel, a Civil Society Alternative Programme (CSAP) is being organised to provide a space for civil society and community groups to raise awareness about the environmental and social issues connected to the WFC2015 agenda, and to promote solutions from civil society. The lead organiser of CSAP is South African based NGO coalition Timberwatch, supported by its international partners. We asked Timberwatch Project Coordinator, Wally Menne, to provide some insight into why the adaptation community might want to develop some understanding of the issues around industrial tree plantations.

**More information on the Civil Society Alternative Programme is available at [www.csap-durban.org](http://www.csap-durban.org)**

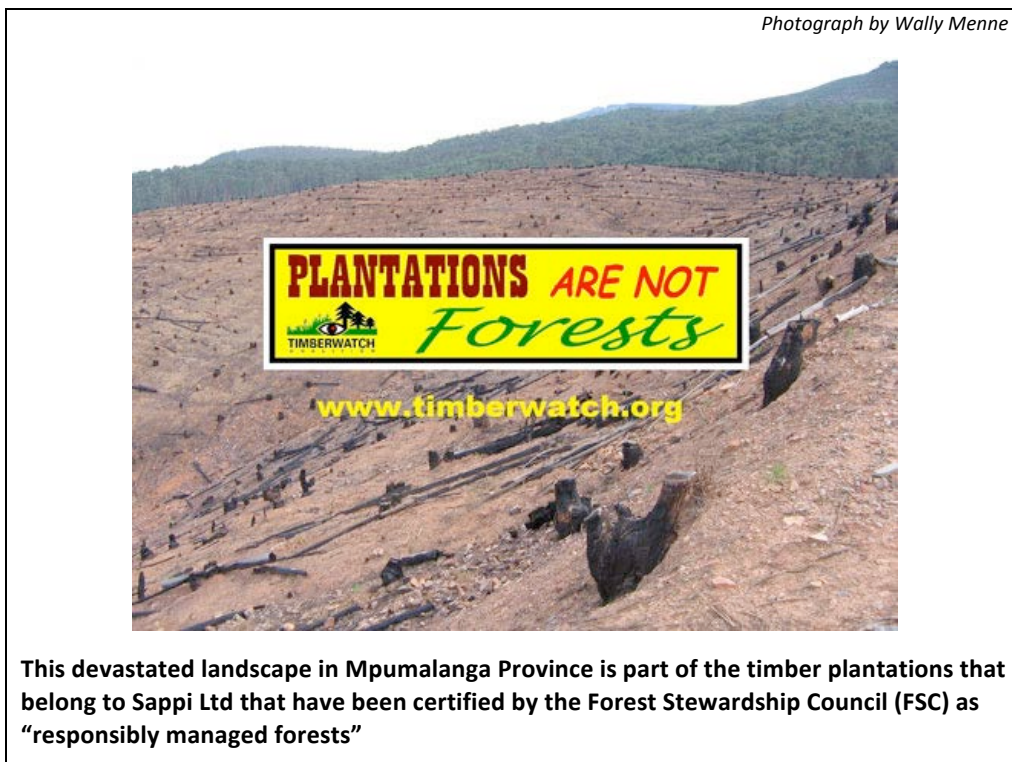
### A key culprit in South Africa's looming water crisis

By Wally Menne

While much of the world has been caught up in economic and political turmoil, a far more serious but less obvious issue is now emerging in many regions: water theft. It is part of a slow, almost imperceptible process which is difficult to detect or to measure, and is therefore seldom viewed as a high priority crime. Yet right beneath our noses vast volumes of water are being misappropriated or polluted by silent thieves that operate 24 hours a day, 365 days a year. The culprits in this case are timber plantations and processing plants. But how can large artificial plantations of alien trees possibly behave so differently from natural forests, which are generally acknowledged as helping to sustain the water supply from natural sources?

Many people assume that forests and tree plantations are the same, because they are both a form of vegetation dominated by trees, but this fallacy can be linked to unexpected water shortages wherever 'fake forests' of alien trees have been established on naturally fertile and well-watered areas that had previously been covered by biodiversity-rich forests, grasslands and shrublands. Artificial conversion of land by tree monocultures has negative impacts that those in the timber industry often choose to ignore.

Despite the fact that there is conclusive evidence, both empirical and scientific, showing how negatively the three million hectares of formal and feral tree plantations in South Africa impact on the country's soil, water and biodiversity, the ugly reality has been deliberately obscured by those who profit from it.



The invasive alien tree species used in plantations such as wattles, gums and pines are evergreen, and therefore consume water throughout the year, unlike the natural vegetation which consumes very little in the dry season, usually during winter, when grassland plants become dormant, and the trees shed their leaves. Additionally, the dense leafy canopy of fast-growing industrial tree plantations helps to prevent rainwater from reaching the soil surface. The combination of water lost through evaporation from water trapped in their foliage along with the groundwater that is drawn up from their roots to be expelled through their leaves is called evapo-transpiration.

During the dry season when there is little or no rain, trees suck water from the underground water table or aquifer. This results in localised depletion which in turn causes ground water from adjacent areas to flow towards the depleted aquifer beneath the plantation. This then causes a reduction in the flow of water into natural aquatic systems during the low flow period when it is most needed in order to preserve ecosystem services that support the survival of downstream habitats and human communities.

Those streams and rivers that would normally have flowed throughout the year then flow intermittently, and this leads to localised droughts that have the effect of further compromising the welfare of local communities - of humans and wildlife. Lakes and rivers that previously supplied these communities dry out, and it then becomes necessary for public money to be spent on building dams and pipelines to replace the water lost due to plantations. Apart from stealing water from Nature and people, tree plantations also lead to the dehydration of adjacent natural vegetation, and this has the direct effect of increasing wild fires. Such wildfires devastate the human environment, causing deaths and loss of community resources, as experienced in Australia, Portugal, South Africa, California, and Chile.



Normally the timber from plantations is processed near to where they are grown, which requires even more water, plus energy (usually of the dirty, fossil-fuel type) to churn out millions of tonnes of paper, packaging, and other products that are not essential for living well, yet pollute everyone's planet.

The negative effect of the huge amount of water consumed by industrial tree plantations can be matched only by the very worst droughts. Research conducted in areas where land was converted to plantations has shown that their consumption can even exceed the amount of rain that falls where they stand. This has been demonstrated in South Africa by measuring the reduction in stream flow that occurs after grassland catchments have been converted to plantations. A report by Whitmore

(1976) describes this as “water piracy” that impacts negatively on both adjacent land uses and downstream ecosystems including wetlands, estuaries and coastal marine habitats.

Tree plantations are in themselves not the real water robbers – they are merely another means whereby multinational corporations and international financial institutions can extract profits from poor developing countries. This unpleasant reality is obscured by all kinds of false claims about plantations, such as their being necessary in order to “take pressure off” real forests, and that they can help to reduce climate change by absorbing carbon dioxide from the atmosphere.

However these unconvincing half-truths are far outweighed by the reality that plantations cause much more ecological damage than they help to avoid, and that the huge volumes of greenhouse gases emitted through the destruction of natural vegetation and the disturbance of top soil that has been absorbing and storing carbon for thousands of years, are far greater than any carbon that may be temporarily stored in plantations before they are cut down and turned into un-recyclable toilet tissue, or other disposable products that end up rotting in garbage dumps or in our waterways.

**For more information about the harmful effects of tree plantations visit [www.timberwatch.org](http://www.timberwatch.org), [www.geosphere.org](http://www.geosphere.org) and [www.wrm.org.uy](http://www.wrm.org.uy)**

**Write to Wally Menne at [timberwatch@iafrica.com](mailto:timberwatch@iafrica.com)**

---

## **South Africa’s proposed INDC under review**

By Rehana Dada

Since the Lima negotiations when countries were asked to communicate their INDC ahead of the Paris meeting, 29 countries have submitted their INDC to the UNFCCC <sup>see note</sup> and others are in the process of preparing or finalising their submissions. The Department of Environmental Affairs is preparing South Africa’s INDC, and this is currently undergoing a stakeholder consultation process prior to Cabinet approval. A number of civil society organisations and groupings are reviewing the document and preparing responses.

South Africa frames its INDC by the National Development Plan and National Climate Change Response, and also states its intention to develop a National Climate Change Adaptation Strategy. Under adaptation, it lists six goals, which include developing a National Adaptation Plan, building institutional capacity, and developing a vulnerability assessment and adaptation needs framework. It outlines the country’s investment in adaptation to date, as well as the investment it requires between 2021 and 2030, saying that investment in adaptation increased from USD 0.64 billion in 2010 to USD 2.31 billion in 2015. There is an intention to scale up a number of programmes beyond 2020 as part of its adaptation work, including a number of ecosystem restoration and job creation programmes and Water Demand Management.

*Photograph by Rehana Dada*



**South Africa’s high use of coal for electricity generation and liquid fuel production makes it one of the highest per capita emitters. It produces about one per cent of global emissions.**

Under mitigation, South Africa refers to the peak, plateau and decline (PPD) emissions trajectory committed to in its national policy, with emissions contained within a range of 398 to 613 Mt CO<sub>2</sub>-eq by 2025 and 2030. It shows its investments in mitigation to include 79 independent renewable energy projects with over 5,000 MW of capacity, involving private investment of R168 billion. Investments have also been made in public transport infrastructure green economy initiatives. A very significant aspect of the South African mitigation INDC is that it includes nuclear power as a “decarbonised energy” option.

South Africa states that its “aspirational” long term goal is to bring total emissions to within the range of 212 to 428 Mt CO<sub>2</sub>-eq by 2050, reserving the right to adjust this goal depending on factors such as other countries’ actions, socio-economic implications, technologies, and outcomes of the new climate agreement. It also claims that, according to a carbon budget produced by South African experts, its mitigation contribution is greater than its fair share as determined using principles of responsibility, capability and sustainable development. However, it acknowledges that other researchers have produced different results, and expresses willingness to engage further on ambition and fairness, “if others do so as well”.

The INDC is “premised on the finalisation of an ambitious, fair, effective and binding multilateral agreement” in Paris, “to enable the delivery of ambitious mitigation, adaptation, climate finance, technology, capacity building and effective transparency arrangements”. South Africa requires support for adaptation and mitigation in the form of finance, technology and capacity-building. The country acknowledges the need for transparent information.

A civil society caucus, facilitated by Project 90by2030, has developed a set of benchmarks against which the quality, appropriateness and adequacy of the South African INDC will be assessed. A key request articulated is that South Africa works towards clarifying the link between the INDC and the new climate agreement – as yet there is no decision on whether the new agreement or INDC will be legally binding. Contributors to the submission include South African Climate Action Network, WWF, Adaptation Network Secretariat, and Alternative Information and Development Centre.



Under adaptation, the submission calls for adaptation programming to: support mainstreaming of climate change concerns into all aspects of development; enhance existing development programming as a way of reducing vulnerability to climate change; support investments in long term local and national planning; be supported by viable costing and resourcing; and be oriented towards building local knowledge and capacity in adaptation. It also requests that adaptation should not be premised on short-term project-based efforts and employment, and that it favours labour intensive initiatives over economic efficiency. The caucus rejects genetically modified organisms, extended commercial agriculture and desalination and large dams as adaptation solutions. Finally, it calls for increased transparency in disbursement of adaptation funds.

Under mitigation, the caucus calls on South Africa to: provide a clear signal of commitment to containing global warming to 1.5 degrees Celsius, consistent with a fair share of the required by science global emissions trajectory; present a clear carbon budget with a mitigation target linked to a specific base year rather than an uncertain BAU trajectory; and outline its potential financial trajectory to support greater efforts towards a low carbon economy. Fracking, carbon capture and storage, and nuclear power are rejected as mitigation options. It also calls for South Africa to express its intention to participate in a global reform of fossil fuel subsidies.

A number of other submissions from civil society are being prepared, and the stakeholder engagement meetings are open to all interested parties.

*Please note that the summaries of the INDC and response above are subjective selections of the text in each document. The full documents should be accessed and read for a comprehensive understanding of the positions they present.*

**For more information on the Department of Environmental Affairs stakeholder engagement process and the schedule of meetings please email Dineo Ngobeni at [dngobeni@environment.gov.za](mailto:dngobeni@environment.gov.za).**

**For more information on the civil society caucus submission coordinated by Project 90x2030 please email Happy Khambule at [happy@90by2030.org.za](mailto:happy@90by2030.org.za).**

**For the submission by groundWork, please email Megan Lewis at [megan@groundwork.org.za](mailto:megan@groundwork.org.za).**

#### **Useful publications:**

1. *Decoding Intended Nationally Determined Contributions: A guide for understanding country commitments*. Published by the World Resources Institute. Available at: <http://www.wri.org/our-work/topics/indcs>
2. *Guide to INDC*. Published by the Climate Development and Knowledge Network. Available at: [http://cdkn.org/resource/resource-guide-helps-least-developed-countries-navigate-intended-nationally-determined-contributions-indcs/?loclang=en\\_gb](http://cdkn.org/resource/resource-guide-helps-least-developed-countries-navigate-intended-nationally-determined-contributions-indcs/?loclang=en_gb)
3. The World Resources Institute is also tracking country commitments, and you can access their database at: <http://cait.wri.org/indc/>
4. INDC submissions are posted on the UNFCCC website: [www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx](http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx)

**Note :** *The unwillingness of some developed countries to commit to mitigation targets unless less developed countries also do so led to a stalemate in negotiations. This was broken at COP17 in Durban in 2011 when the Durban Platform for Enhanced Action (ADP) was established. The ADP commits parties to negotiating a new global agreement that includes all countries and covers mitigation, adaptation, finance, technology transfer, capacity building and transparency, with a deadline of COP21, which is scheduled for December 2015 in Paris. Uncertainty about the legal form of the new agreement as well as reluctance from many countries to make binding commitments resulted in agreement that all countries would submit Intended Nationally Determined Contributions (INDC). Countries were asked to communicate their INDC to the UNFCCC in advance of COP 21.*

## **Climate News**

### **Travel support available for Adaptation Network members**

The Adaptation Network has a limited amount of funds available to support members to attend meetings and conferences on behalf of the Network. This may be used, for example, for attending climate change related stakeholder meetings at national and provincial level, or could go towards costs for international conferences such as the UNCCD or UNFCCC COPs this year. Any member who is actively involved in such national and international processes and who is willing to engage as a member of the Network and report back to it on activities and outcomes is welcome to apply. Although there is no deadline, once all funds have been allocated, the offer will be closed for the year. If you would like to apply for support for all or part of the cost of travel, accommodation and/or subsistence, please write to us directly.

**If you would like to apply please write to Rehana Dada: [dada@adaptationnetwork.org.za](mailto:dada@adaptationnetwork.org.za)**

### **Update on Adaptation Fund Small Grants Facility**

One of the projects approved by the Adaptation Fund for South Africa is a small grants project called 'Taking Adaptation to the Ground: A small grants facility for enabling local level responses to climate change'. The small grants mechanism is designed to empower rural poor communities in the most climate vulnerable areas to directly access finance for adaptation, with the Adaptation Fund interested in supporting projects that build resilience to climate change in agriculture, human settlements, and livelihoods. Provision will be made for at least 12 small grants for community-based adaptation projects in the Namakwa and Mopani Districts. Conservation South Africa and CHOICE Trust are the local facilitators. The project intends to begin formal activities within the year, which places impetus on interested parties to begin project development and planning. The project is led by SANBI as the National Implementing Entity for the Department of Environmental Affairs with SouthSouthNorth appointed as the Executing Entity.

**For more information in the Namakwa District please contact Amanda Bourne: [abourne@conservation.org](mailto:abourne@conservation.org) or Tel 027 718 1565.**

**For the Mopani District please contact Nikki Stuart-Thompson: [nikki@choicetrust.co.za](mailto:nikki@choicetrust.co.za) or Tel 015 307 6329.**

### **Chinese emissions shown to be lower than previously estimated**

Research published in *Nature* this month show that China's carbon emissions are substantially lower than previously estimated. For the period 2000-2012, China's energy consumption was higher than reported by the country, but emissions for coal were on average 40 per cent lower than estimates used by the IPCC, and from cement production, 45 per cent lower. A key contributor to the new estimates was consideration of fuel quality. The new study estimates that China's carbon emissions from fossil fuel and cement in 2013 is 2,49 Gt, which is 14 per cent lower than previous estimates used for the IPCC AR5, and 10 per cent lower than the estimate given in the Global Carbon Project. The Tyndall Centre for Climate Research points out that there are still uncertainties, but refining estimates of carbon emissions enable more accurate climate projections, and better-informed policy. The research team includes researchers from Harvard University, the University of East Anglia, Chinese Academy of Sciences, Tsinghua University and 15 other international research institutes.

The paper, *Reduced carbon emission estimates from fossil fuel combustion and cement production in China* is published in *Nature* on 20 August 2015.

### **Renewable energy contributed about R4 billion to South Africa's economy so far this year**

During the first half of the year, renewable energy from South Africa's first wind and solar projects created more financial benefits to the country than they cost, according to a study by the CSIR's (Council for Scientific and Industrial Research) Energy Centre. The benefits are derived from savings in diesel and coal fuel costs, and unserved energy that was avoided as a result of renewable energy contributions. "Unserved energy" refers to energy that would not have been delivered due to inability to meet demand, in other words energy that would have been subject to load shedding. Fuel cost savings amount to R3.6 billion, and avoided unserved energy (totalling 203 hours) resulted in a saving of R4.6 billion. Tariff payments to wind and photovoltaic independent power producers amounted to R4.3 billion during this time. Dr Tobias Bischof-Niemz of the CSIR's Energy Centre says that these estimates are conservative, and the actual cost savings of renewable energy are presumed to be higher than the study shows.

**More information is available at: [www.csir.co.za](http://www.csir.co.za)**



### **A drier future for the Central Andes**

By the end of the century, the Central Andes of Peru and Bolivia could experience a drop in precipitation by up to 30 per cent, according to a paper published in *Environmental Research Letters*. The research team compared tree ring and ice core data of the past 1,000 years with model calculations for the future, showing an unambiguous trend towards greater aridity in the Andes. Current precipitation is within the normal fluctuation range for recent centuries, but by the end of the century the probability of dry years will be four times higher than pre-industrial times, and there could be a noticeable drop in precipitation during the rainy season within the next two decades. Global warming is likely to strengthen the westerly winds over the Central Andes, and stronger westerly winds in the upper troposphere reduces the flow of humid air from the Amazon regions into the Andes, resulting in greater aridity. Factors such as deforestation of the Amazon rainforest and lower levels of glaciation meltwater could exacerbate this trend.

### **North America lizard embryos highly susceptible to warming**

Biologists at Arizona State University say that the impact of warming on North American lizards could be more severe than previously thought. Lizard embryos die when subjected to temperatures of about 40 degrees Celsius, even for a few minutes, and repeated exposure to above normal temperatures, even in shaded nests, can result in physiological and behavioural complications. Mothers can protect their eggs by digging nests deeper or in shadier soils, but even cooler nests might be exposed to excessive temperatures, and hatchlings might be challenged in finding their way out of deeper nests. Lizards also lay their eggs in one clutch so an entire clutch could be lost in a single heat wave. The implications for predator species and broader biological systems could be significant. The research is published online in *Proceedings of the Royal Society B*.

### **Interest in methane absorbing bacteria in Arctic soils**

A group of researchers at Princeton University show that a type of bacteria that occurs in carbon-poor Arctic soils is able to remove methane from the atmosphere, and also becomes more efficient as temperatures rise. They claim that if Arctic temperatures rise by 5 to 15 degrees Celsius over the next century, the methane-absorbing capacity of these soils could increase 5 to 30 times. These carbon-poor soils make up nearly 90 per cent of soils in permafrost regions. It is not clear if the “methane-hungry” bacteria will still be as functional in a future warmer world, and the researchers say they do not have a direct answer as to whether these soils can offset global atmospheric methane emissions. The research is published in *ISME Journal*.

### **Adaptation through a dog’s lens**

Researchers at Brown University and the American Museum of Natural History reveal that modern day dogs began to evolve from their mongoose-like ancestors in response to climate change about 40 million years ago. At that stage North America’s heartland was warm and wooded, and the dog’s ancestor was adapted for an ambush-type predation style. Its forelimbs had the flexibility to grapple with prey, more like a cat’s. As the global climate cooled and forests gave way to open grasslands, they evolved over time into pursue-pounce predators like coyotes or foxes. Their forelimbs became longer and more suitable for running long distances. Over the same period, their teeth evolved to be more durable, which the researchers attribute to a shift to prey that had been rolled around on gritty savannah rather than soft forest floor. The results were reached through examination of the elbows and teeth of 32 species of dogs over the period 40 million years ago to 2 million years ago. Although herbivores were evolving longer legs over that time, the researchers shows that the dog’s evolution was more closely correlated with climate related changes to their habitat than to anatomical change of their prey. The team intends to now explore potential changes in modern day predators in response to anthropogenic climate change. Their research is published in *Nature Communications*.

### **Fourth Adaptation Network training workshop of 2015 to be hosted at Rhodes University**

The Adaptation Network will be hosting the fourth workshop in its 2015 series of capacity development events in Grahamstown on 01 & 02 September 2015. Registration is closed, but if you would like to attend, please do drop us a line to check if there is a space still open for you. The workshops are titled *Practical Adaptation for Vulnerable Communities* and are designed to enable participants to deepen their understanding of climate science, and conceptualise and facilitate adaptation processes. Workshop attendance is free for Adaptation Network members, and non-members are required to pay a R200 registration fee. Participants are asked to cover their own travel and accommodation costs.

**Details at [www.adaptationnetwork.org.za](http://www.adaptationnetwork.org.za) or please email [info@adaptationnetwork.org.za](mailto:info@adaptationnetwork.org.za)**

## **Newsletter Credits**

### **Contributors**

Ebrahim Dada: Islamic Dawah Movement

Noel Oettle: Environmental Monitoring Group

Rehana Dada: South African Adaptation Network

Siyabonga Myeza: Environmental Monitoring Group

Wally Menne: Timberwatch Coalition

Thanks to the EurekaAlert service.

Articles do not necessarily represent the views of all members of the Adaptation Network.

To comment or contribute please email: [info@adaptationnetwork.org.za](mailto:info@adaptationnetwork.org.za)

**Our deadline for submission for the next newsletter is 18 September 2015.**