

A young girl with dark skin and hair is carrying a large, heavy bundle of cut firewood on her back. She is wearing a blue t-shirt and a green shawl. She is looking towards the camera with a slight smile. The background shows a rural landscape with green fields and a clear blue sky.

# **CLIMATE CHANGE, DEVELOPMENT AND ENERGY PROBLEMS IN SOUTH AFRICA: ANOTHER WORLD IS POSSIBLE.**

EXECUTIVE SUMMARY

# EXECUTIVE SUMMARY

In climate terms, South Africa is already living on the edge. Much of it is arid or semi-arid and the whole country is subject to droughts and floods. Even small variations in rainfall or temperatures would exacerbate this already stressed environment. Most South African crops are grown in areas that are only just climatically suitable and with limited water supplies.

But that climate is set to change for the worse because of rising global emissions of greenhouse gases (GHGs). Indeed, there are already ominous signs of change – that dry seasons are becoming longer and wet seasons starting later. Rainfall is reported to be becoming even more variable, with rain coming in more concentrated, violent bursts.

When the Government of South Africa used internationally agreed scientific computer models to explore the potential impacts of climate change on South Africa over the next 50 years, it predicted:

- A continental warming of between 1 and 3 deg C.
- Broad reductions of approximately 5 – 10 % of current rainfall, but with higher rainfall in the east and drier conditions in the west of South Africa.
- Increased summer rainfall in the northeast and the southwest, but a reduction of the duration of the summer rains in the northeast, and an overall reduction of rainfall in the southwest of South Africa.
- Increased rainfall in the northeast of the country during the winter season.
- Increased daily maximum temperatures in summer and autumn in the western half of the country.
- Wetter conditions with a reduction in frost, which could see malaria mosquitoes expand their range onto the Highveld.

As the climate changes, it is South Africa's poor, the majority of the population, who will be the hardest hit. Climate change worsens existing vulnerabilities and adds to the pressures on the environment and natural resources on which so many South Africans directly rely. Climate change could increase the prevalence and distribution of vector-borne diseases such as malaria and

dengue fever and water-borne diseases such as cholera and dysentery. Such things mean that people living with HIV and AIDS in particular would experience increased risks.

South Africa has been playing an influential role as a developing country in the international negotiations even though it is not yet obliged to make commitments to reduce emissions. But South Africa is also part of the problem - the largest emitter of green house gases on the African continent and home to the world's biggest single emitter of CO<sub>2</sub>.

Although it is not (yet) under any legal obligation, South Africa has a moral obligation to reduce its emissions, which would also send a powerful political message to the world and increase the strength of its negotiating position in global climate change talks and its leverage in demanding emissions cuts from rich countries.

South Africa is faced with a difficult challenge in trying to juggle three imperatives – development (conventionally based on fossil fuels), poverty eradication and climate change. On the one hand, the country has to fast track provision of adequate transport, power, communication networks, water, sanitation and other infrastructure services. Much of this development implies that South Africa's GHG emissions will increase. The provision of these services is essential to improving people's well being and to reducing poverty.

On the other hand, conventional development as carried out in South Africa (like many other countries) has not focused on reducing poverty, will not reduce it by itself, and may sometimes exacerbate poverty and ill-health. And now South



Sasol refinery, Picture credit: Bobby Peek, groundWork

Africa also has to respond to the impacts of climate change by reducing emissions and carrying out programmes to help poor people adapt to the changing climate.

Energy production is a particular concern. South Africa's dependency on coal-fired power stations has already resulted in a yearly per capita emission rate of about 10 tons of carbon dioxide, 43 percent higher than the global average. At the same time, this extremely high per capita energy use has not meant that everyone in South Africa has access to energy; 30% of South African citizens do not have access to electricity.

South Africa has benefited from an abundant and cheap supply of electricity since the founding of the monopoly public utility, the Electricity Supply Commission (later renamed Eskom) in 1928. Eskom in effect subsidized South Africa's industrial development and is responsible for supplying 95% of the country's electricity – 90% of which comes from coal-fired power stations. Eskom accounts for about half of South Africa's total emissions.

Eskom predicts that with electricity supply growing at a potential 4.4% per annum CO<sub>2</sub> emissions from electricity generation would more than double over the next 20 years. Eskom's publicity makes much of its wind farm in the Western Cape, but the contribution of renewable energy to its plans is negligible, adding a mere 100MW (0.25% of current national generating capacity). Eskom's solar water heater programme, which aims to replace 900,000 solar water heaters over five years, managed to install a mere 800 heaters nationally in 2008.

Sasol is a Coal-to-liquids (CTL) company established under Apartheid as a way of securing white South Africa's independence on foreign oil. The company is responsible for producing almost 72 million tons of CO<sub>2</sub> a year and its Secunda CTL plant is the biggest single emitter of CO<sub>2</sub> on the planet. Given these figures, it is in the company's business interest to reduce its emissions as climate change debates take centre stage in the lead up to the Copenhagen climate change conference at the end of 2009. But Sasol's planned response relies heavily on the unproven technology of carbon dioxide

capture and storage, and it has announced plans to construct a new 80,000 barrels per day CTL plant in Limpopo. The Government has given the new CTL plant its blessing, even though another CTL plant will increase the country's CO<sub>2</sub> emissions even further, and would make a mockery of the aims of the government's climate change mitigation plans.

### **What needs to happen?**

To address climate change, the current energy system must be overhauled. South Africa is officially committed to a 15% renewable energy target by 2020 but progress on the ground is painfully slow.

The current financial crisis should provide an opportunity for all societies to shift to a low carbon economy. The global slow-down is causing job losses and hardship to many, but equally, climate change means that it would be reckless to try to go back to fossil fuel based development pathways that will anyway have to be abandoned soon. This is an opportunity to redevelop economies and create a new industrial revolution that develops and is powered by clean energy technologies. Doing so will create new jobs and a secure future for all. We calculate that a realistic programme to promote renewables in electricity, biogas, solar heating and biofuels could produce an extra 1.2 million jobs, direct and indirect, by 2020. Clean energies also hold out much greater hope that communities that lack electricity from the central grid and who struggle to find fuel for cooking will see their energy needs met.

However, getting the policy framework right is critical if we are to realise this potential. With the right framework, both the private sector and new community enterprises will take off and rapidly become a big part of the solution to South Africa's power shortage. The National Energy Regulator (NERSA) is to be congratulated for considering a Feed in Tariff scheme to support renewable energy – a tried and tested policy tool. This tariff must be set at the correct levels to stimulate investment. The tariffs should be set to provide reasonable returns for efficient renewable energy operations but not so high that the boom penalises poor consumers. Measures such as carbon taxes should also be considered.

In moving forward, government has to take responsibility for the inaction of industry. Yes, it has developed policies on climate change, but these policies must be accompanied by implementable plans and actions and more importantly a visible change in government policy to hold industry accountable.

In addition, poor and vulnerable communities in South Africa need the right help to adapt to the unavoidable consequences of climate change. Even if all emissions are stopped now the cumulative impact of existing emissions will still be felt for decades to come. People are developing their own mechanisms to adapt, but more assistance is needed from government. Communities facing rising temperatures, with associated stress on water supplies, crops and animals need the right policies put in place straight away. Those policies must uphold the principles of economic, social and environmental justice; the economy must serve the needs of people.

To simultaneously embark on the path to a future that provides cleaner energy to all citizens equitably and effectively, the following measures should be given immediate attention:

- 1 A moratorium on building further coal-fired plants after Medupi and Bravo (i.e. from 2013).
- 2 An immediate moratorium on any new coal-to-liquid plants.

- 3 The Treasury should institute its fossil fuel levy (ZAR0.02/kWh) with immediate effect, revenue from this to be ring-fenced for Free Basic Electricity.
- 4 A staggered implementation of carbon taxation.
- 5 The provision of 1 million solar water heaters by 2020.
- 6 15% of all electricity to come from renewable energy by 2020, and 50% by 2050.
- 7 Make energy efficiency in Reconstruction and Development Programme (RDP) housing a mandatory measure by 2015.
- 8 Invest in an efficient public transport system.
- 9 Promote gardening in urban and peri-urban areas and around homesteads.
- 10 Increase public awareness and promote behavioural change among consumers.

A year and a half ago, an official from the Department of Environmental Affairs and Tourism (DEAT) stood up before a group of environmentalists and NGO representatives and pleaded, *“Where is the environmental movement? Where are the placards? We can’t change things without the pressure of citizens.”* The time to agitate, educate and organise is now. At the end of 2009, the governments of the world will meet to decide our collective fate at the UN climate change conference at Copenhagen; they have this one chance. Perhaps we should remind them just exactly who they are working for.

**The full report and more information are available at [www.oxfam.org](http://www.oxfam.org) and from [www.earthlife.org.za](http://www.earthlife.org.za)**



Sustainable Energy and Climate Change Partnership (SECCP)

A project of Earthlife Africa Johannesburg

Tel: +27 11 339 3662

Fax: + 27 11 339 3270

Email: [seccp@earthlife.org.za](mailto:seccp@earthlife.org.za)

Website: [www.earthlife.org.za](http://www.earthlife.org.za)

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