



# CLIMATE CHANGE ACTION PLAN

**Debate Topic:** *The world should adopt our plan to significantly combat climate change!*

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## **Action Plan Title: Ama2020**

### **1. Problem**

What problem or problems related to climate change will your plan address?

Throughout the world, the transportation sector is the fastest growing source of greenhouse gas emissions. The streets and infrastructure of most of Africa's cities are being overwhelmed by traffic, leading to rising levels of hazardous air pollution. The problem escalates on a daily basis, as the number of vehicles on our roads increase, contributing to emission of greenhouse gases.

Our plan would encourage cleaner, energy efficient transport initiative by developing rail networks in major urban centers of Africa. Our plan promotes rail as the primary mode of mass commuter transportation instead the current situation of mini bus taxis and buses.

We promote a long-term shift towards low emission and sustainable forms of transportation. Our plan would be locally relevant, as 88% of the population, are dependent on public transport, which is a key factor in catalyzing meaningful reduction in CO<sub>2</sub> emissions.

We believe that the voluntary method of greenhouse emission control will not succeed in constraining Africa's emissions.

Currently the public transport system in African countries is the largely dependent on the use of bus and minibus taxis. Railway infrastructure in most cities is limited and covers only the older parts of cities and has not kept up with new city development.

We resolve to implement the turnaround plan for passenger railway services over a twelve year period. (2008-2020), hence our title 2020. *Ama* is an African word for *belonging to*. We chose a twelve year period for our policy to prove its efficacy.

Africa should consider the mistakes made on continents, such as Europe, which indicates that trying to build your way out of the problem by constructing more and more roads can be expensive and deliver only short-term benefits.

We aim to implement our plan in developing countries, with particular emphasis on Africa. The successes of the African model can serve as a blue print for other developing countries.

***What's causing those problems?***

Rail transport to reduce emissions is preferable to current situation of using poorly maintained buses and minibus taxis. Currently there are no well developed rail transport initiatives. It is imperative that the need for an effective rail transport system is given greater priority than it is at the moment. A 10 per cent cut in transport-related smoke and fine air particles is expected to achieve an average annual benefit of over \$750 million, or even more. Most governments have limited funding for infrastructure improvements and often exert limited day-to-day control over what occurs within the public transport system.

A deeper analysis of our African rail transportation reveals a range of complexities, such as costs and specifically our aging rail networks infrastructure, and a decreased volume of freight it carries. This underscores the urgent need for greater investment and optimization of rail transportation, which investment is the critical component for accelerating growth and more importantly in cutting CO2 emissions. By situating transport hubs in poorer areas of our cities, these areas could be regenerated through development. This could help with poverty alleviation, which will also help combat climate change because for many of the poor, combating climate change is not a priority when it is up against daily survival.

If only the government began investing in public transport in the mid-nineties, we could have had an efficient mass transport system functioning now in all our major cities. An efficient rail transport network can go a long way towards reducing greenhouse gas emissions and prove to be a more cost effective means of transportation for Africa's people.

### ***Why can't current policies and actions fix those problems?***

Africa's rail service is small and limited compared to international standards. An additional R5 billion a year is needed to address the decline in service levels and to implement government's transport strategy – of achieving a sustainable rapid mass public-transport system – over the next 10 to 12 years. Most of Africa lacks the financial and human resource to improve their rail service to become the primary mode of mass commuter transport. An efficient rail transport system would reduce congestion on our roads, thereby contributing to reducing greenhouse gas emissions. Currently 88% of Africa uses public transport that includes old and unreliable buses and taxis. The new taxi initiatives in South Africa does very little in combating climate change, as the focus is on safer transport, not cleaner transport.

Cities across Africa have been urged to consolidate their struggles towards accessing a growing range of global environment funds in order to be able to assist in the funding of sustainable public transport systems and less polluting energy supplies.

Note that almost all of the railroads in Africa run from the interior to the coast. There are few "inland" railroad connections. This reflects the fact that railroads were expensive to build. They were purposefully built to take raw materials from the interior of Africa to the coast where they could be exported to Europe.

Rail should be the backbone of the public transport system. Recent shifts in policy have focused on a new vision for public transport, yet little if any change is discernable on the ground. These shifts promote a safer mode of transport, but do little for reducing greenhouse gas emissions.

## **2. Actor**

*What group, government, or individual will be responsible for taking the actions you propose?*

Our plan of placing more emphasis on rail transport will have multiple benefits and would provide an opportunity for building partnerships and coalitions among various interest groups.

Under the Kyoto Protocol on climate change, developed countries can offset some of the emission through renewable energy projects in the developing countries via the [Clean Development Mechanism](#) (CDM). The United Nations Framework Convention on Climate Change estimated that projects under the CDM could (over the long -term) generate up to \$100 billion worth of funds for developing countries.

Just as South Africa was given the opportunity to host the 2010 Soccer World Cup, so too Africa's rail system should be given cash injections and the human resources to be cleaner and more energy efficient.

- Firstly a key role player to implement funding for the development of a rail network would be international Aid agencies such as USAid (US Agency for International Development); DANIDA (Danish International Development assistance) amongst others.
- The African Union would facilitate the process
- National governments- Government will mobilise investment of more than R25 billion from public and private sources in national rail system
- Government departments such as Ministry of Transport; Energy; Environmental Affairs, etc
- Private sponsors and philanthropists such as Richard Branson; Oprah Winfrey; Bill Gates, etc
- Developed nations would work closely with African nations, in particular countries that have transformed successful rail networks.
- Civic and Community based organisations ;tertiary institutions ; local communities- it is essential to build strong public awareness through education and outreach

### **3. Action**

*What action should the actor take? Be specific: What's the goal? What are the targets, and when will they be reached? (Optional: How will your plan be funded? Enforced?)*

Our target is the year 2020.

Our plan would attract commuters who would otherwise travel by vehicular transport.

The actors would support and promote rail as the primary mode of mass commuter transportation instead the current situation of mini bus taxis and buses.

Road transport is responsible for 25% of Africa's CO<sub>2</sub> emissions and 31% of its energy consumption. Our plan is to encourage the use of rail transport to reduce CO<sub>2</sub> emissions by making it the primary mode of mass transport in Africa.

The trains will operate on biogas produced by decomposing organic in an oxygen free environment. The train emits just a fraction of the carbon dioxide released by diesel engines.

Passenger and freight trains will help to reach the target of a cut of 60% by 2020. These estimates a reduction of 7.1m tonnes of CO<sub>2</sub>, from an estimated 11.7m tonnes in 2020.

New budget allocations from government will focus on the investment towards building economic infrastructure which is also key to sustainable growth and development.

The international community, in the form of donors/philanthropists, would be encouraged to invest in upgrading existing rail network. National governments would be required to re-prioritize their budgets to accommodate a rail system to incorporate a country specific programme. Input from local community/civil society and environmental organisations would be encouraged in a mutually beneficial manner in so much as it is also important to build local knowledge and capacity about climate change.

Currently there is a stigma attached to travelling by rail- that migrant workers and less well of use trains. If we are serious about climate change we have to change that stereotype in order for rail to be the transport of choice.

Carbon dioxide is the main greenhouse gas, accounting for about 84 per cent of the 'basket' of Greenhouse gas emissions in 2005, and road transport is one of its major producers.

#### **4. Benefit(s)**

*What good thing(s) will happen as a result of your plan?*

##### **Benefit #1**

The major benefit of rail transport would be a reduction in CO<sub>2</sub> emissions and less reliance on fuel and oil. There would be a tangible reduction in traffic congestion and a resultant decrease in CO<sub>2</sub> emissions

##### **Evidence & Examples for #1**

At present CO<sub>2</sub> emissions from the various modes of transport are made up of:

- 76% from road/ vehicular transport
- 12 % from aviation
- 10 % from water transport
- 2% from railways

Railways have the potential to be the least environmentally damaging form of transportation.

A passenger train running solely on biogas was manufactured in Sweden and goes a long way towards making public transport more environmentally friendly, as it emits just a fraction of the carbon dioxide released by diesel engines.

##### **Benefit #2**

First is the cost - If you compare the cost of fuel, parking and auto maintenance, to the cost of a bus or train pass, you'll find that a monthly commuting pass is far more economical. If you live in an urban area and use the bus or train as your primary transportation source, you save even more on car payments, insurance and repairs. This saving will definitely help our cash strapped economy as people would now have a cost efficient way to travel, whilst helping to combat climate change at the same time.

##### **Evidence & Examples for #2**

Travel time and congestion costs savings to road users from fewer people using their cars especially in the peak periods.

Moreover, train tracks permit a far higher throughput of passengers per hour than a road the same width. A high speed rail needs just a double track railway, one track for each direction. A typical capacity is 15 trains per hour and 800 passengers per train which implies a capacity of 12,000 passengers per hour in each direction. By way of contrast, the maximum capacity for a single lane of highway is 2,250 passenger cars per hour). Assuming an average vehicle occupancy of 1.57 people, a standard twin track railway has a typical capacity 13% greater than a 6-lane highway (3 lanes each way), while requiring only 40% of the land).

Energy-saving measures not only help avoid climate change, but also hold out the prospect of economic advantages. Higher energy efficiency is often associated with higher productivity due to the link between the deployment of modern technology and energy-cost savings.

#### **5. Advantages**

*What are the advantages of your plan compared to the status quo (the way things are right now)?*

**Advantage 1:**

Our plan will have multiple advantages. It would provide opportunity for building partnerships and coalitions among various interest groups. More than 80% of commuters would change from using vehicular transport to using rail transport.

In South Africa 3, 9 million are public transport commuters. The 2, 5 million taxi commuters account for over 63 percent of public transport work trips, bus services account for another 22 percent of public transport commuters and the balance are carried to work by train. In addition to the 2, 5 million commuters who use minibus-taxis as the main mode of travel, there are another 325 000 commuters who use taxis either as a feeder mode to other public transport services.

30 per cent of households spend more than 10 per cent of their income on public transport.

1% of the world's population lives in Sub Saharan Africa where 340 million survive on less than \$1 a day. **South Africa has** approximately 180,000, internal combustion engined, 15-seater mini-busses, traversing the country. The implications and impacts of these vehicles on the environment are multiple. Generally, the initial life span of these vehicles does not exceed three years due to severe wear and tear. As the vehicles age, they are simply "rebuilt" from reconditioned parts. CO2 and NOX gasses are rife in cities like Johannesburg and Cape Town. Commuters, pedestrians and the broader community are constantly exposed to varying degrees of pollution.

**Evidence & examples:**

Reductions in greenhouse gas emissions, reduced accidents, improved local air quality, reduced noise pollution, reduced urban sprawl and the "hidden" cost of motoring such as land used for roads and parking, severance and social costs of energy use.

**Advantage 2:**

The current transport system relies disproportionately on private cars and taxis, while rail corridors are significantly under-utilised. Road congestion is not only inconvenient for commuters; it constrains the economy by slowing business traffic and freight. Rail is extremely efficient at moving people. By 2030, 30,000 commuters could be travelling by rail to the CBD and across the region in the morning peak. Moving the same number of people by car would require around 120 kilometres of extra arterial road and motorway lanes costing at least \$3.5 billion. Around the world, cities with high-frequency metropolitan passenger rail services use trains. Trains are quieter, faster between stations and more environmentally-friendly. The region must take decisive action to combat road congestion .Rail would provide mobility for non drivers.

**Evidence & examples**

Well established high speed rail systems in use today are more environmentally friendly than air or road travel. This is due to:

- displaced usage from more environmentally damaging modes of transport.
- lower energy consumption per passenger kilometer
- reduced land usage for a given capacity compared to motorways

High-speed rail has the advantage over automobiles in that it can move passengers at speeds far faster than those possible by car, especially within cities. The lower limit for HSR (200 km/h) is substantially faster than the highest road speed limit in any country. Ignoring the few countries without a general speed limit, the speed limit is rarely higher than 130 km/h. For journeys that connect city center to city center, HSR's advantage is increased due to the lower speed limits within most urban areas. Generally, the longer the journey, the better the time advantage of rail over road if going to the same destination.

**6. Convince Us!**

*Tell us in one paragraph why your solution is the best:*

25% of CO<sub>2</sub> emissions and 31% of energy consumption comes from the transport sector. We want to transform the African public transport system from dependency on vehicular transport to one that favours the use of rail transport. Carbon dioxide is the main greenhouse gas, accounting for about 84 per cent of the 'basket' of greenhouse gas emissions in 2005, and transport is one of its major producers.

Rail transport services would be developed and implemented as a functional venture between the commuting public, the private sector and local government.

Therefore, rail's biggest contribution to tackling global warming in the short-term comes from increasing its capacity, so that it can accommodate demand-growth as people and firms factor carbon-costs into their travel and transport decisions.

88% of Africans use public transport and our plan targets this majority by implementing a plan that would affect them. We have not suggested hybrid vehicles or electric cars as most people in the developing world would not have access to it or do not own private vehicles. Currently there is a great dependency on the use of taxi and buses- both of which are unreliable; add to carbon emissions. Our plan is not a ONE SIZE FITS ALL one but is rather designed to meet the needs of the poorest of the poor in the developing countries.