

# *Air transport and climate change economics*

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Federation

Windhoek, 2nd & 3<sup>rd</sup> April 2009

Namibia is the only country in the world to specifically address conservation and protection of natural resources in its constitution

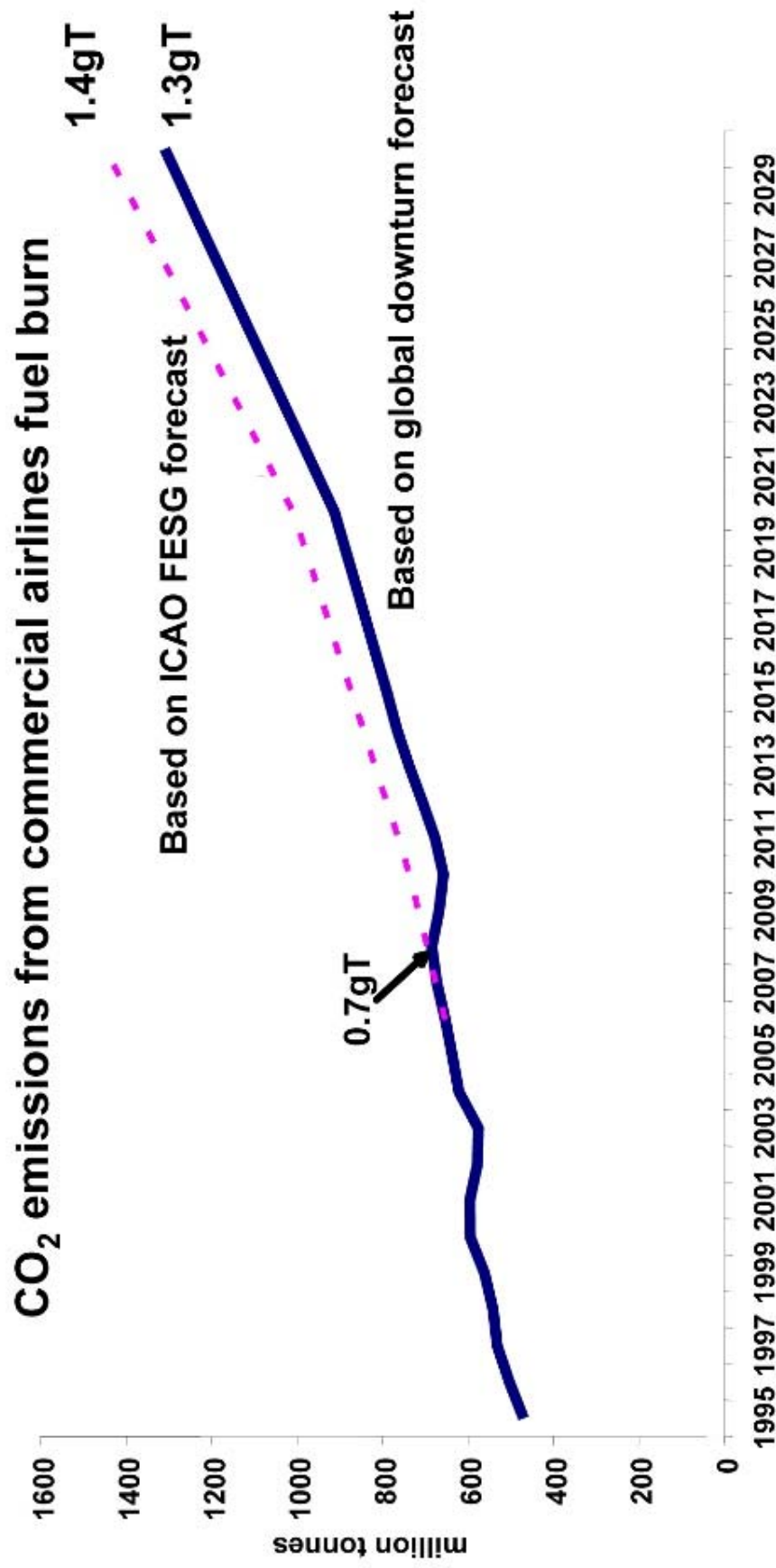
*Article 95 states: “The State shall actively promote and maintain the welfare of the people by adopting international policies aimed at the following: maintenance of ecosystems, essential ecological processes, and biological diversity of Namibia, and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future.”*

Forecast global aviation CO<sub>2</sub> emissions  
from regulator databases:

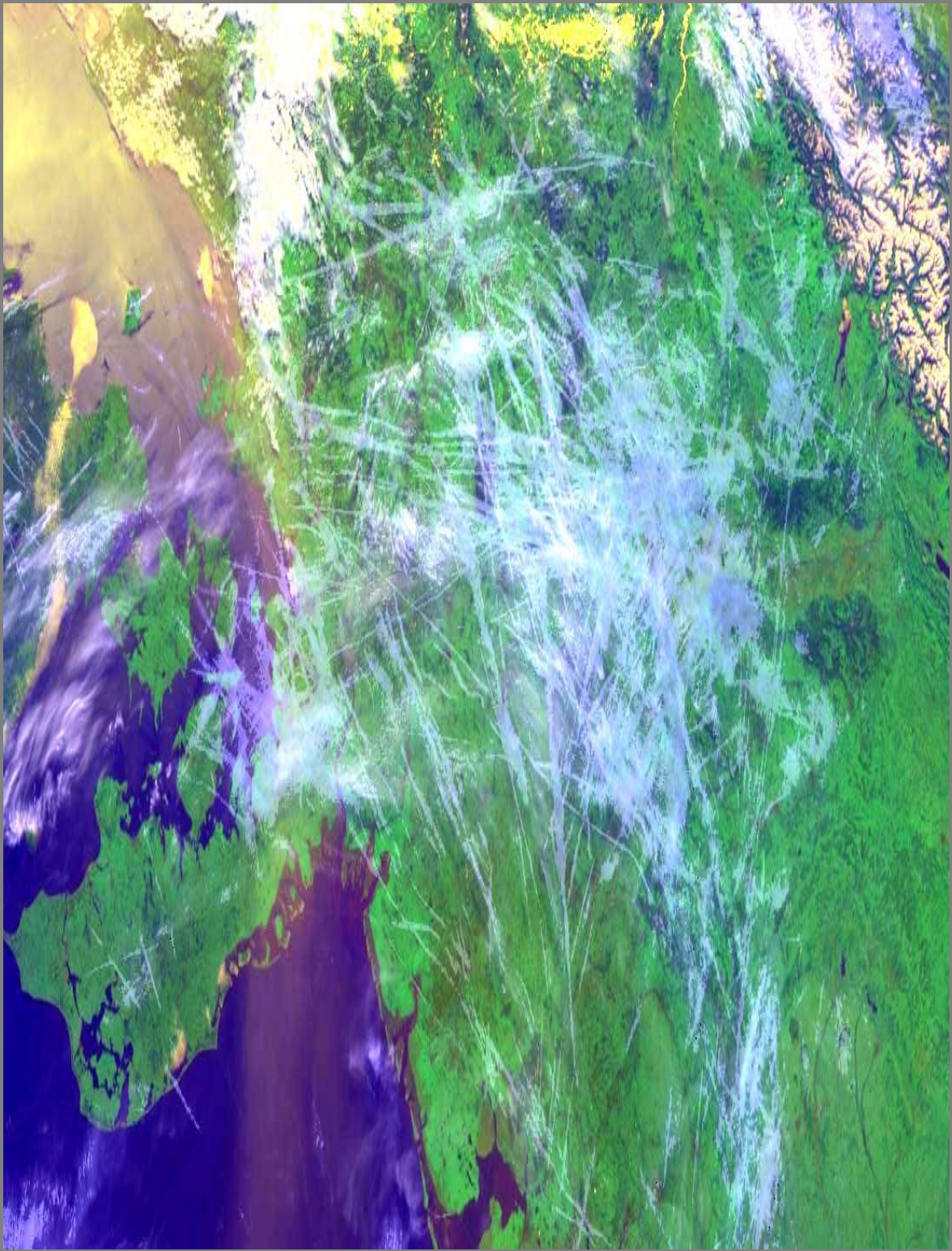
2005	610.637
2010	776.612
2015	991.101
2020	1088.886
2025	1228.934



# CO<sub>2</sub> Emissions Forecast To Grow







# Control & reduce impacts

- UN IPCC Special Report “Aviation and the Global Atmosphere” 1999
- Efficiency gains would be 50% by 2050  
approx 1% p.a.
- Operational gains inc. CNS/ATM would be 18% over the same period
- Average efficiency gain of around 1.3%



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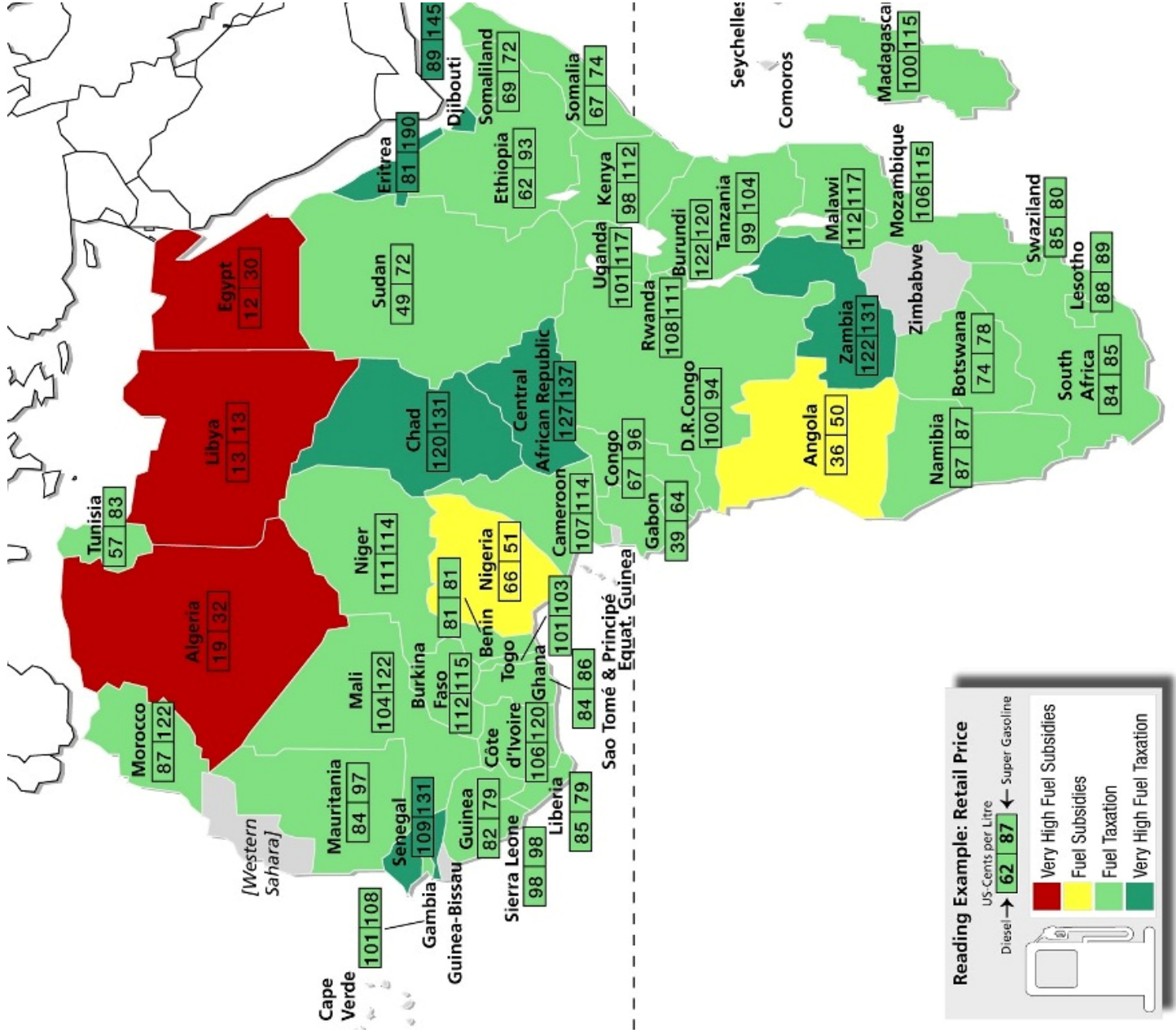
787  
DREAMLINER

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# Environmentally benign?

- fuel capacity of the 787-3 and 787-8 is 126,903 litres
- each litre of kerosene burnt results in 3.2 kilograms of CO<sub>2</sub> emitted to the atmosphere
- 406 tonnes of CO<sub>2</sub> are emitted for each full fuel load
- ***406 tonnes of CO<sub>2</sub> is equivalent to 138 people driving 9,000 miles each per year, or 1,242,000 miles in all!***
- For the 787-9, the fuel capacity is 138,700 litres, with 444 tonnes of CO<sub>2</sub> emitted for each full fuel load
- ***444 tonnes of CO<sub>2</sub> is equivalent to 150 people driving 9,000 miles each year, or 1,350,000 miles in total!***



# Aviation and the EU ETS

- Cap and trade scheme for airlines – cap will be 97% of 2004/6 average CO<sub>2</sub> emissions starting in 2012, decreasing to 95% from 2013 onwards
- % auctioned will be 15% but market growth of 25-30% between 2005-2012 (4% p.a. average) expected
- An average airline will be paying for 40% of its CO<sub>2</sub> emissions (15% auctioning + 25% permits)
- Share of permits to airlines based on overall %share of EU emissions in 2010/11 – airlines to report this data, details/methodology still awaited

# What does all this mean?

- Environmental “*benefit*”, CO<sub>2</sub> reduction from sector is -36% or 122 MtCO<sub>2</sub> by 2015
- -46% or 183 MtCO<sub>2</sub> by 2020
- These figures include all the “*savings*” from bought credits
- EC cost pass through estimated at €4.6 to €39.6 for return trip, trip length dependent with an allowance price of €30
- Demand impact: 135% growth over period instead of 142% - or not very much

Barcelona, 13<sup>th</sup> May 2008



# Conclusions

- Demand management & behavioural change now urgent!
- Aim to stabilise emissions growth from aviation means other sectors will have to work harder
- Tough technology & operational goals, not greenwash, with independent monitoring
- 2030 & 2050 sectoral forecasts of emissions reductions and share - where are we going?

# Conclusions

- Carbon finance mechanisms should be aimed at small island states, Africa and Asian coastal deltas for mitigation and adaptation schemes as a matter of extreme urgency!!!
- Scope to increase lightly-taxed aviation sector via ticket taxes for the developing world: Chirac/French scheme, recent LDC/IIED proposal
- Preserve and develop air travel/tourism sector throughout Africa within global CO<sub>2</sub> limits
- Now is *not* the time for carbon cowardice!