



IKI Brown Bag Lunch - Food & Facts

22.09.2020, 12:30 - 13:30 (CEST), online

Pop-up Power Plants - Small Scale Waste to Energy Solutions

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Integrated Air Quality Management and Climate Change Mitigation

- Funded by BMU, affiliated with PMEHL Programme of World Bank
- Until Dec. 2020; 3 Mio. budget
- Partner countries (cities): Vietnam (Hanoi) and South Africa (Tshwane and Johannesburg)

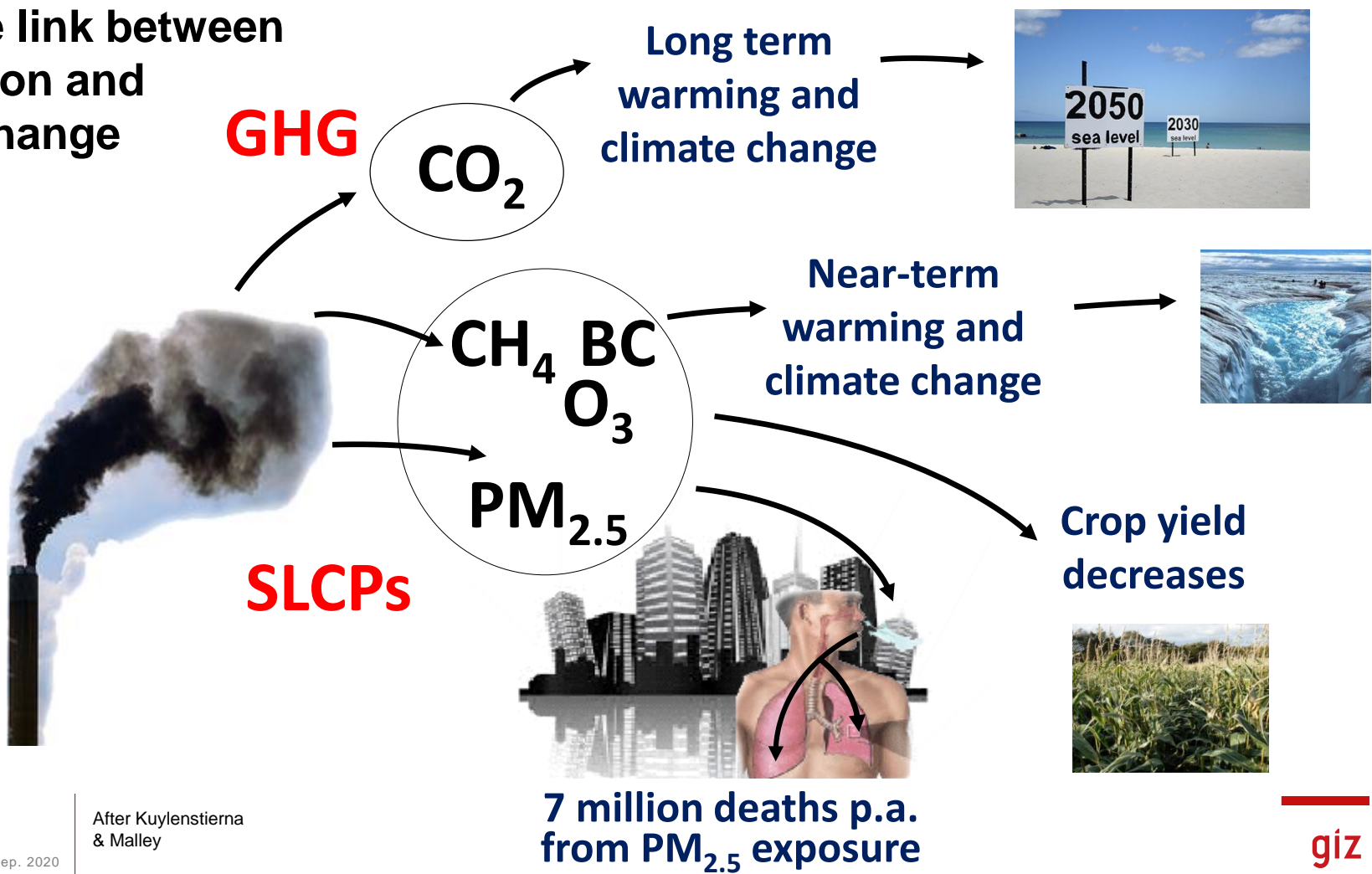


- Team: Tangmar Marmon (AV), Duong Nguyen, Elizabeth Masekoameng, Sarisha Perumal, Anabel Bornhold, Tim Holst, Carsten Lange

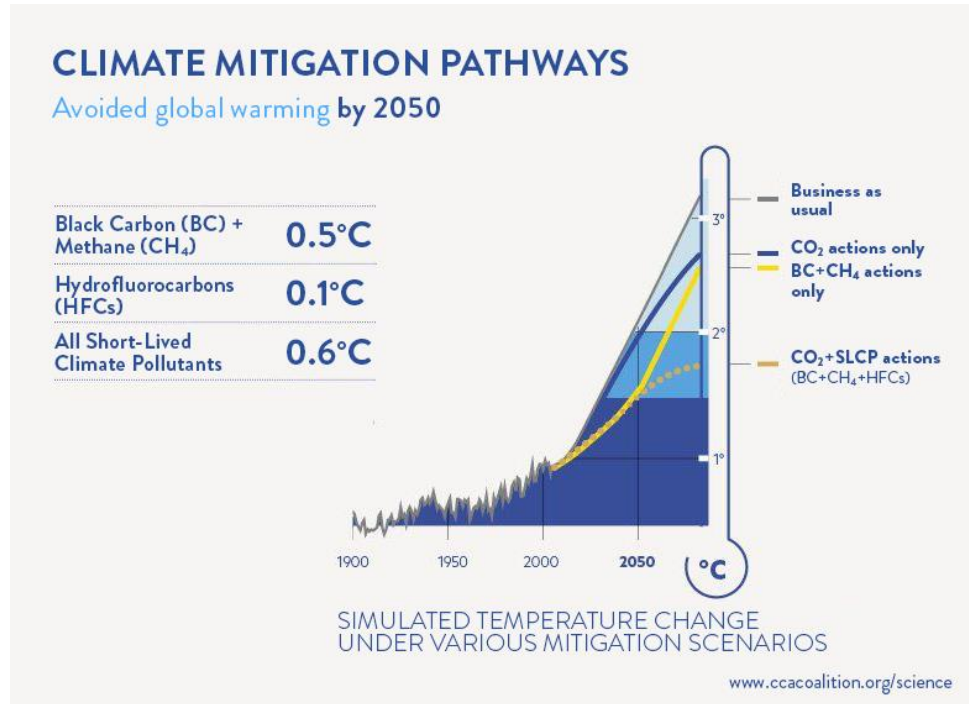
The intended impact of project

- **Increased knowledge** and **enhanced capacities** of decision makers and technical staff will result in better and well implemented **AQM policies**, laws and plans.
- Linking **AQM** with **GHG** emissions reductions paves way for policies that **address both topics simultaneously**.
- Since policies will be related to participating countries' **NDCs**, a contribution at the global level towards fulfilling the Paris Agreement is expected, consisting of **short term as well as long term measures against global warming** (SLCPs and GHG).
- Results, experiences and **best practices** regarding integrated policies and plans for AQM and GHG mitigation are **disseminated** and will lead to more countries taking up the lessons learnt for their own policies.

The close link between air pollution and climate change



The significance of tackling SLCP emissions



Co-benefits mitigation approach of SLCPs: Multiple benefits for climate, human health and agriculture

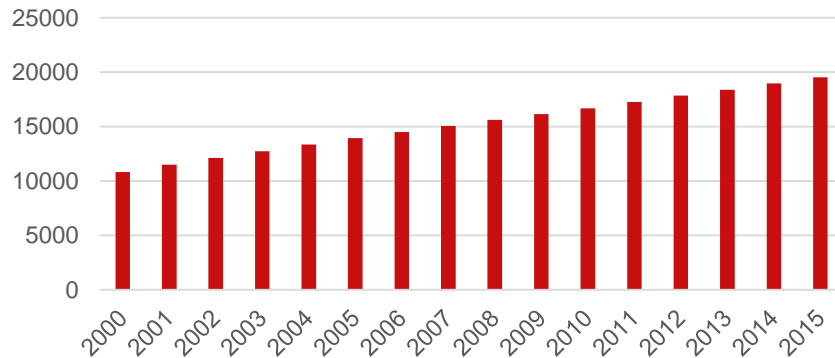
Main sources of short-lived climate pollutants

- Construction activities
- Mobile sources: cars & motorcycles
- Heavy industry: steel works, plastic production, cement factories etc.
- Electricity generation using fossil fuels (coal)
- **Waste decomposition and burning**
- Residential cooking and heating
- Agriculture practices
- Natural sources: forest fires, storms etc.
- Transboundary pollution



Waste problem in South Africa (esp. Tshwane and Johannesburg)

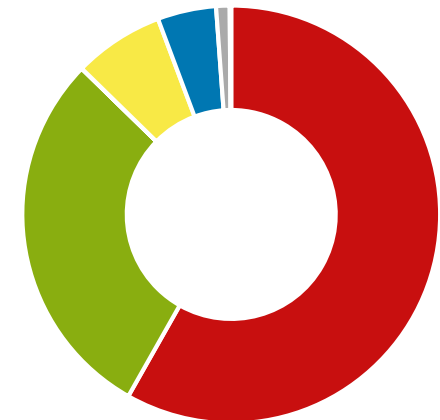
Total emissions from waste in South Africa, 2000-2015 (in Gg CO₂e)



GHG National Inventory Report South Africa, 2000-2015

Main contributor to PM_{2.5} emissions in Tshwane is open waste burning (on landfills, unofficial dump grounds etc.)

Composition of Landfillgas in Tshwane (% vol.)



- Methane
- Carbon dioxide
- Non-methane VOCs
- Water vapour
- Nitrogen
- Oxygen
- Ammonia

Emission Inventory Report 2017, City of Tshwane



Problems of waste management in Tshwane and Johannesburg

- Waste decomposition and burning emit GHGs and SLCPs, posing challenges for NDC fulfilment
- Landfill sites running out of space
- Increasing costs

Criteria for solutions

- Integrated approach with social, environmental and economic benefits (co-benefits approach)
- Should address specific needs of cities
- (Fairly) easy and quick to implement
- Previously tested successful approach

BMU's Better Together Award 2019 was awarded to Carbonlites



Carbonlites pop-up power plants that produce biogas and organic fertiliser from organic waste was successfully trialled in India. Would it work in South Africa too?

→ Feasibility study in October 2019

