



Why phase-out lead ?

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United Nations Environment Programme

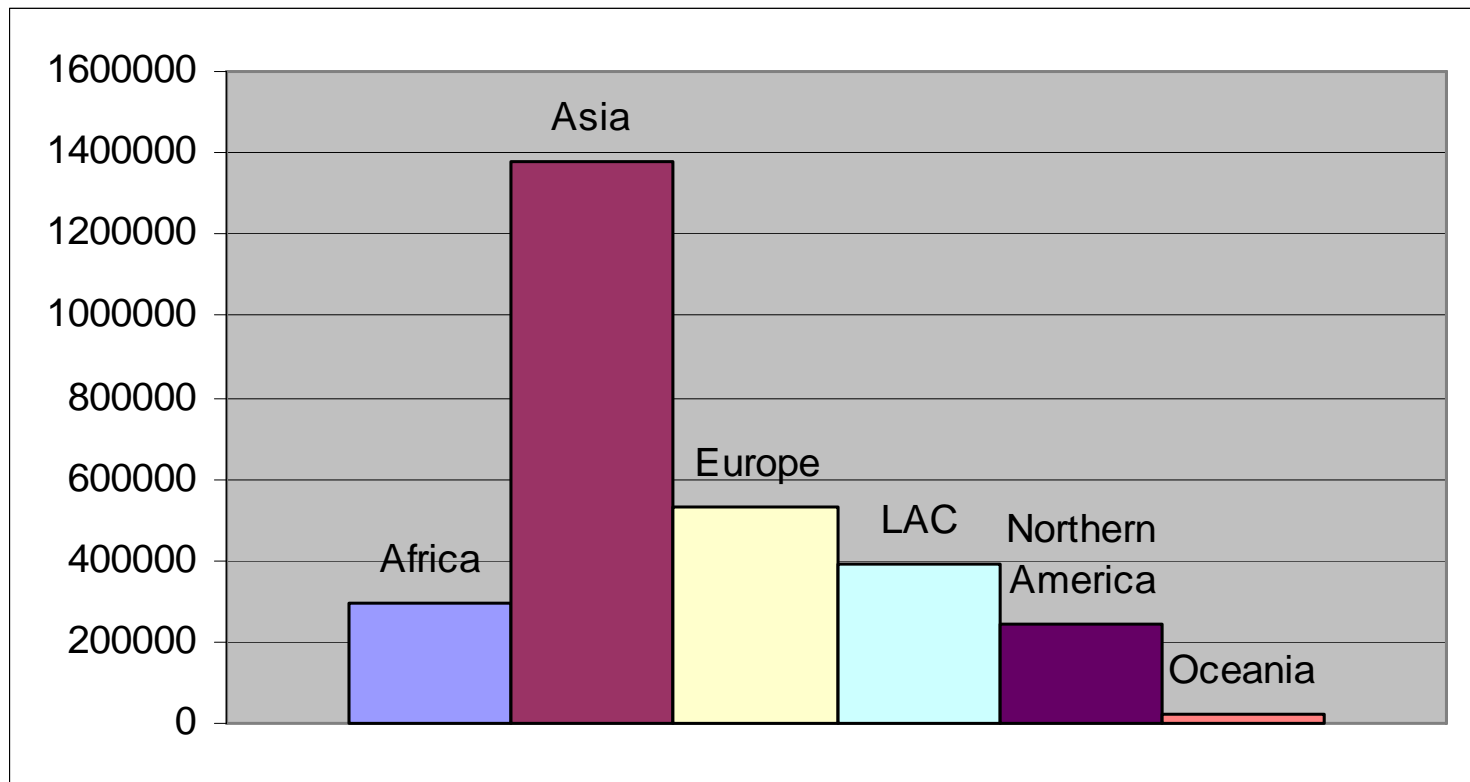
Mongolia, July 2008







Urban populations – by Region

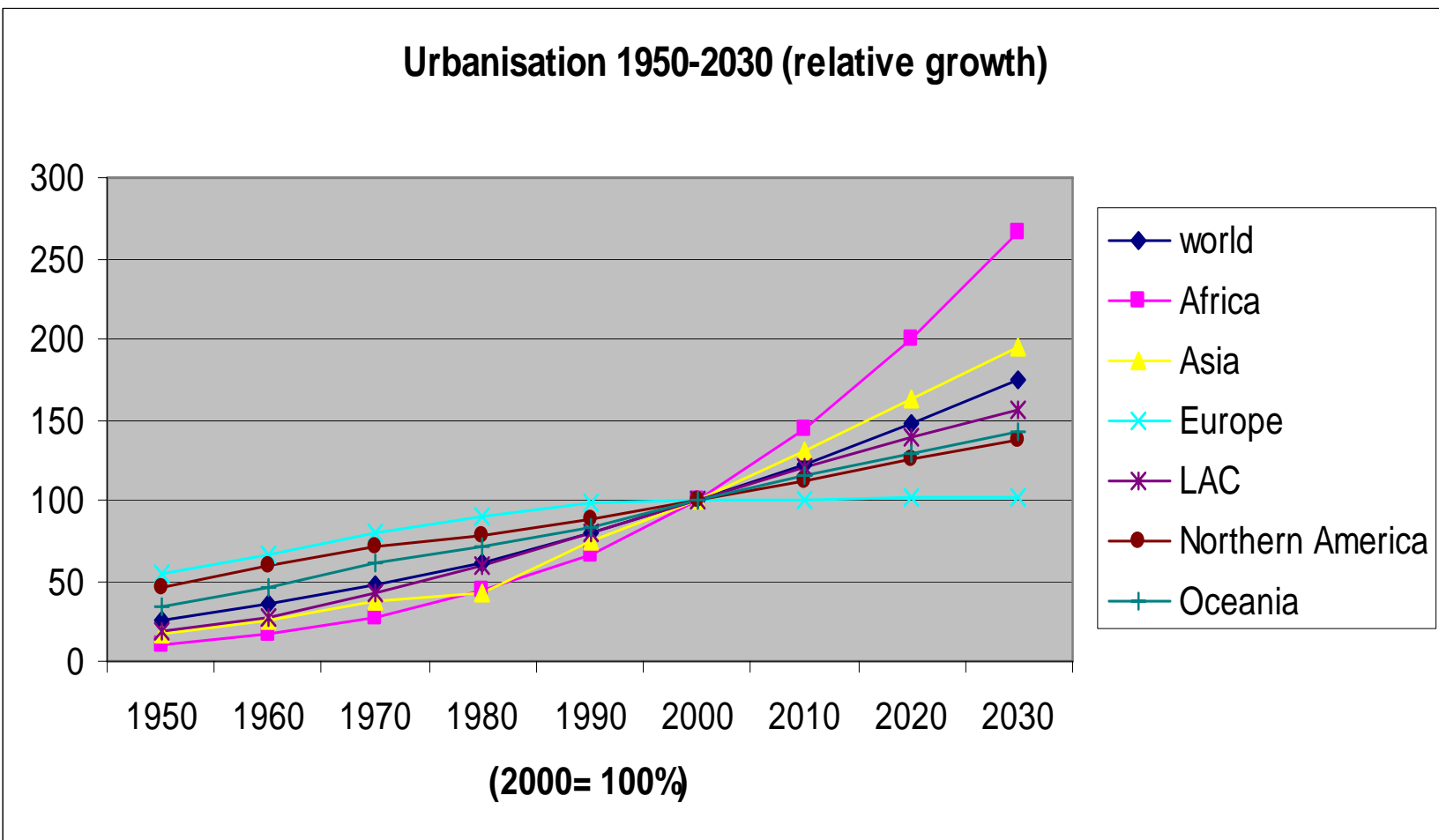


Urban populations in 2000, by region

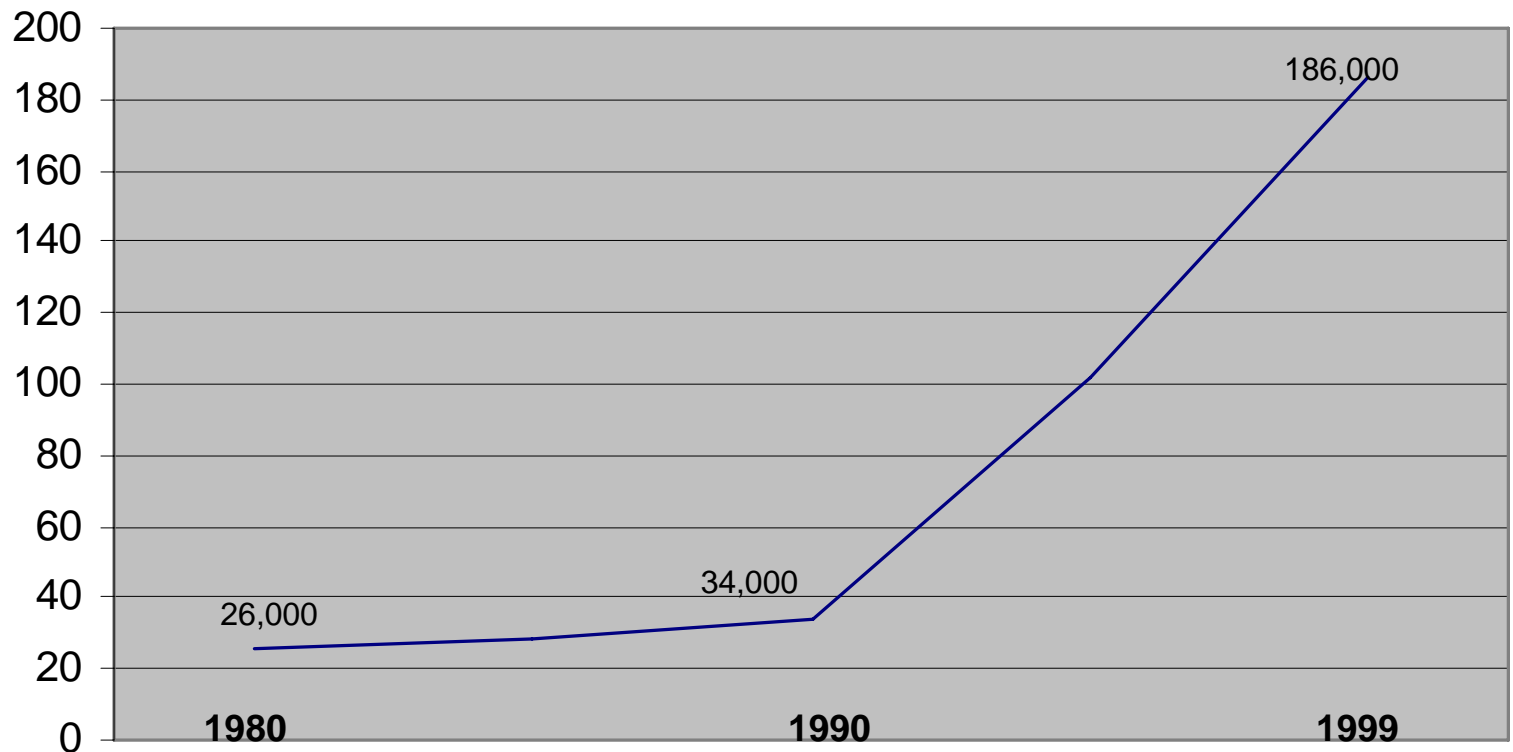


Urbanisation by Region

Urbanisation 1950-2030 (relative growth)



Vehicle Growth: Uganda Example



Vehicle Growth Uganda 1980-1999 (in thousands)

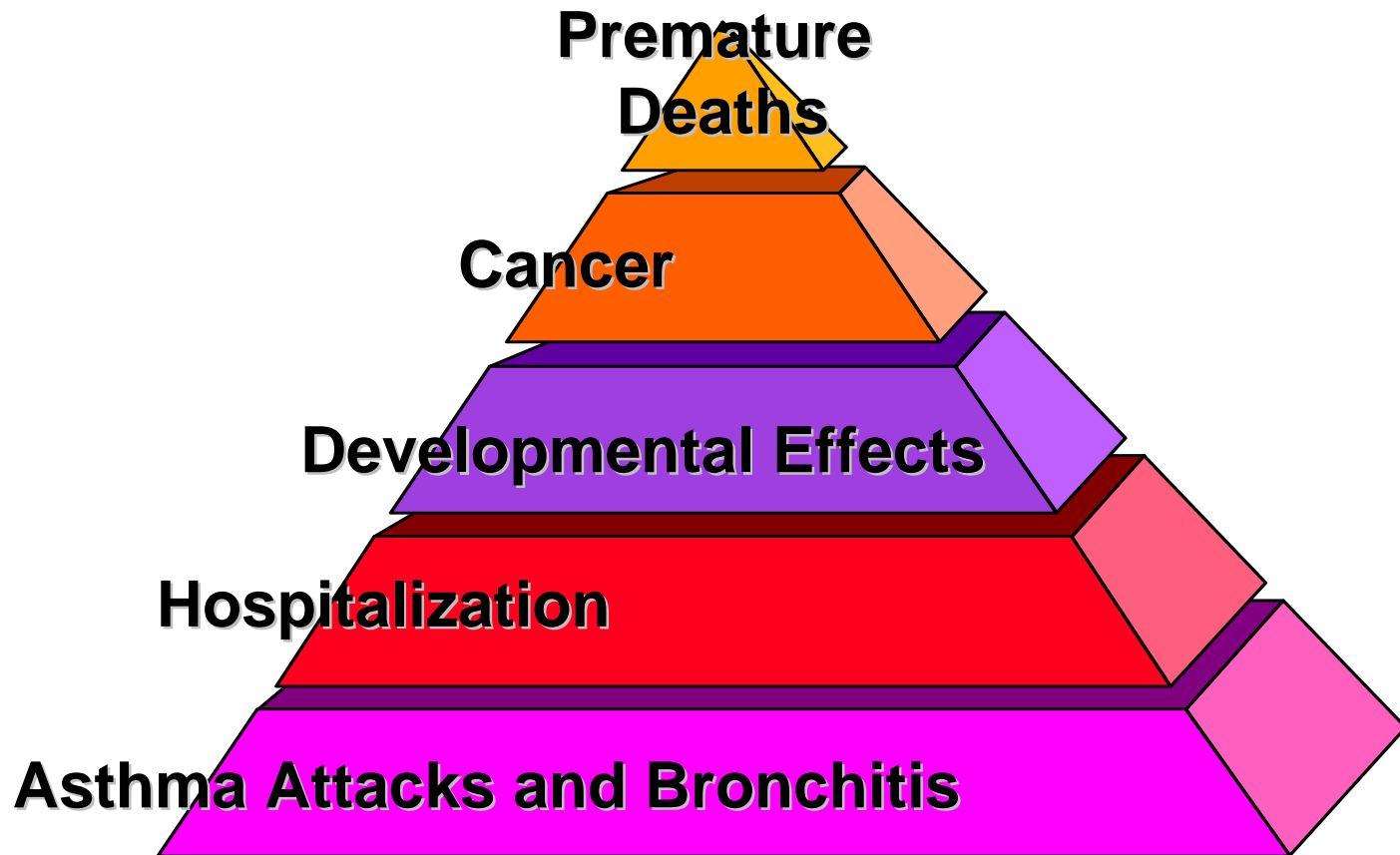


Urban air pollution a key issue

- WHO estimates more than 1 billion people exposed to outdoor air pollution exceeding maximum recommended levels
- Up to 1 million premature deaths, up to 1 million pre-natal deaths
- Local and global effects (climate change)
- Cost of urban air pollution estimated to be 2% of GDP, in developed countries and more than 5% in developing countries
- Vehicle emissions largest source of air pollution in developing countries (up to 90%)



Air pollution: health effects






Why lead was added

- As an octane enhancer, to prevent engine knock
- However,*
- Refinery technology has improved
 - Modern cars manufactured with hard valve seats
 - Valve seat recession not likely as occurs under conditions of lengthy high speed driving



Why phase-out lead

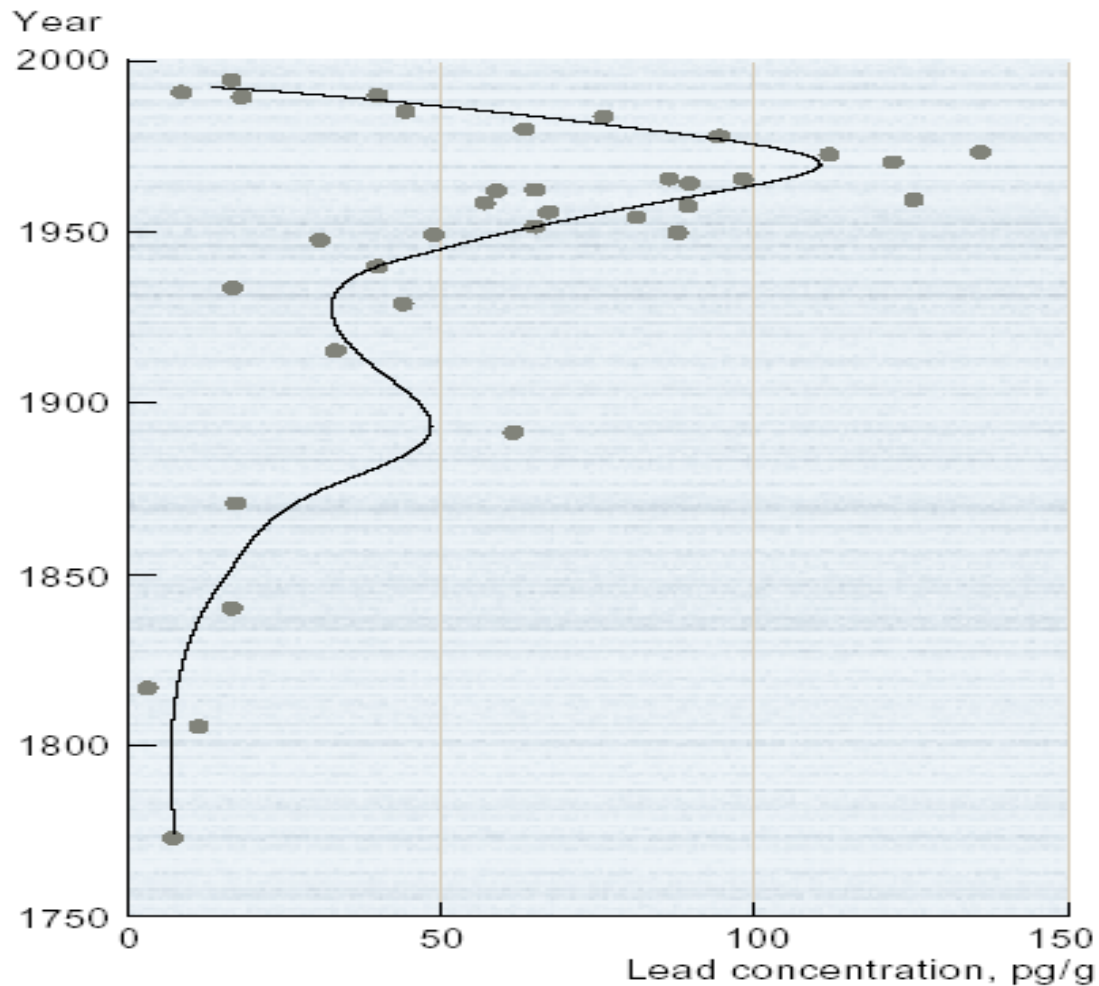
- Lead is highly toxic
- Lead from gasoline is highest source of atmospheric lead
- Lead has serious health impacts (impairs development of brain function in children and lowers IQ; increases heart and respiratory diseases in adults among other associated diseases)
- No level of lead is safe



Leaded gasoline: Health Effects (example Egypt)

- Heart Attacks - 6,500 to 11,600
- Strokes - 800 to 1,400
- Premature Deaths (Adults) - 6,300 to 11,100
- Infant Deaths - ~820
- Average IQ Loss in Children - 4.25 Points
- Egypt went unleaded

Lead in Ice Core of Greenland





Benefits of unleaded gasoline

- Reduces atmospheric lead level
- Allows for introduction of catalytic converters
- Catalytic converters reduce other emissions (e.g carbon monoxide, nitrogen oxide, hydrocarbons) by up to 90%
- Is cheaper and reduces vehicle maintenance costs



Promoting unleaded gasoline: benefits

ULG : better for your **car**

- fouling up engine
- corrosion exhaust

ULG: better for your **wallet**

- reduced maintenance costs engine & exhaust
- slight efficiency improvement

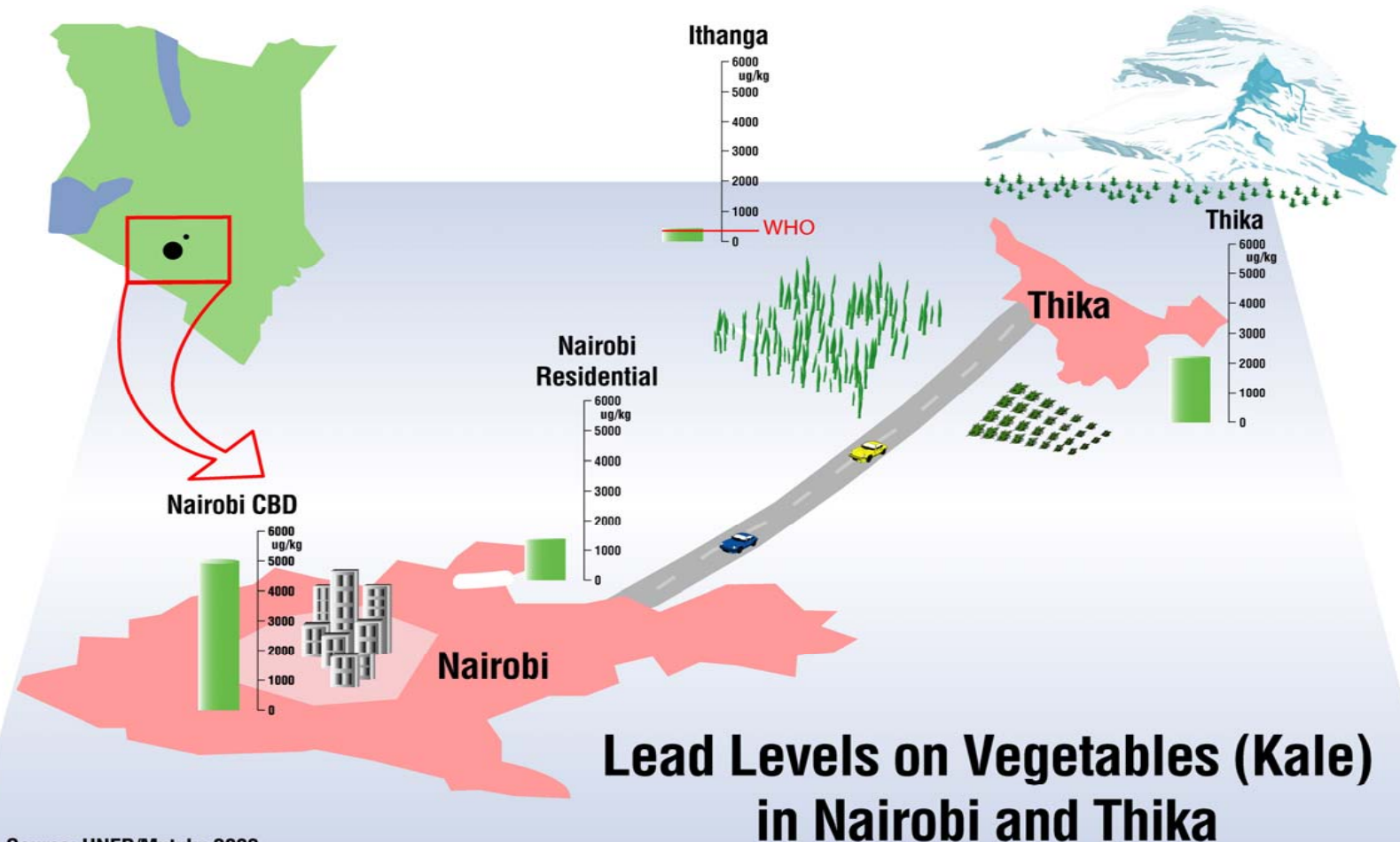
ULG: better for **health and environment**



Experiences

- Over 85% of gasoline consumed worldwide is unleaded
- Leaded gasoline used in North Africa, East Europe and two countries in Middle East
- Study by UNEP/JKUAT in Kenya showed high lead levels in soil & food
 - * Concentrations high in cities and near highways
 - * Lead in vegetable samples 25 times higher than WHO standard

Lead Levels in and around Nairobi (UNEP/JKUAT study)



**Lead Levels on Vegetables (Kale)
in Nairobi and Thika**

Source: UNEP/Mutuku 2003

Way Forward

- For oil importing countries
 - Joint effort of all stakeholders
 - Government Policy pronouncement
 - Introduce legislation/grade
- Countries with refining capacity
 - Decision on refinery closure or upgrading



After phase-out

Other important issues include:

- Sulfur in fuels
- Clean vehicles technologies
- Clean vehicles
- Urban air quality monitoring
- Emission measurement



6th Global Partnership Meeting

Beijing



Ruslan Z...



In recognition of outstanding performance as
Queen of France
this certificate is presented to
Lucy Ntogo

In recognition of outstanding performance as
The Sulphur Slayer
this certificate is presented to
Mary M'Mukindia

In recognition of outstanding performance as
Miss Kenya
this certificate is presented to
Annenmarie Kinyanjui

In recognition of outstanding performance as
Swiss Embassy Extraordinary
this certificate is presented to
Elienne Lizat

In recognition of outstanding performance as
De Jongest Bois
this certificate is presented to
Rob de Jong

In recognition of outstanding performance as
Miss X-Communicated
this certificate is presented to
Xanya Scanlon

In recognition of outstanding performance as
Urban Web Goddess
this certificate is presented to
Salome Mberyu

In recognition of outstanding performance as
Max Do-a-lot-and-scuba-dive-a-little
this certificate is presented to
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