

# The Fourth GGKP Annual Conference

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## Can Ethiopia's Modernization be Green?

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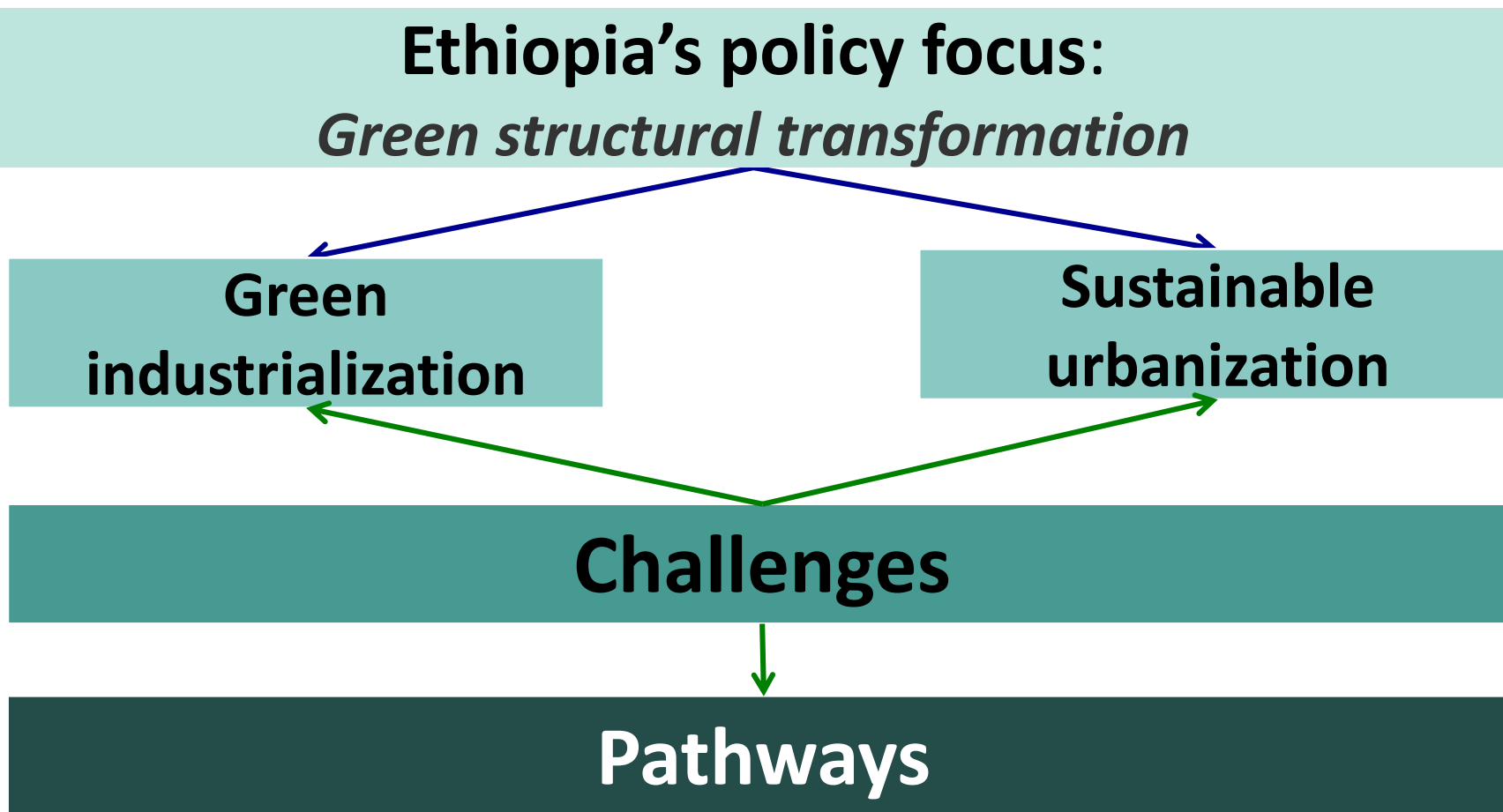
**Ethiopia's policy focus:**  
*Green structural transformation*

**Green  
industrialization**

**Sustainable  
urbanization**

**Challenges**

**Pathways**




# Ethiopia has started implementing a very ambitious Climate Resilient Green Economy strategy.

*“Nothing like it has been tried before, much less in one of the world’s largest and poorest nations.”*

Scientific American, Oct. 13, 2015



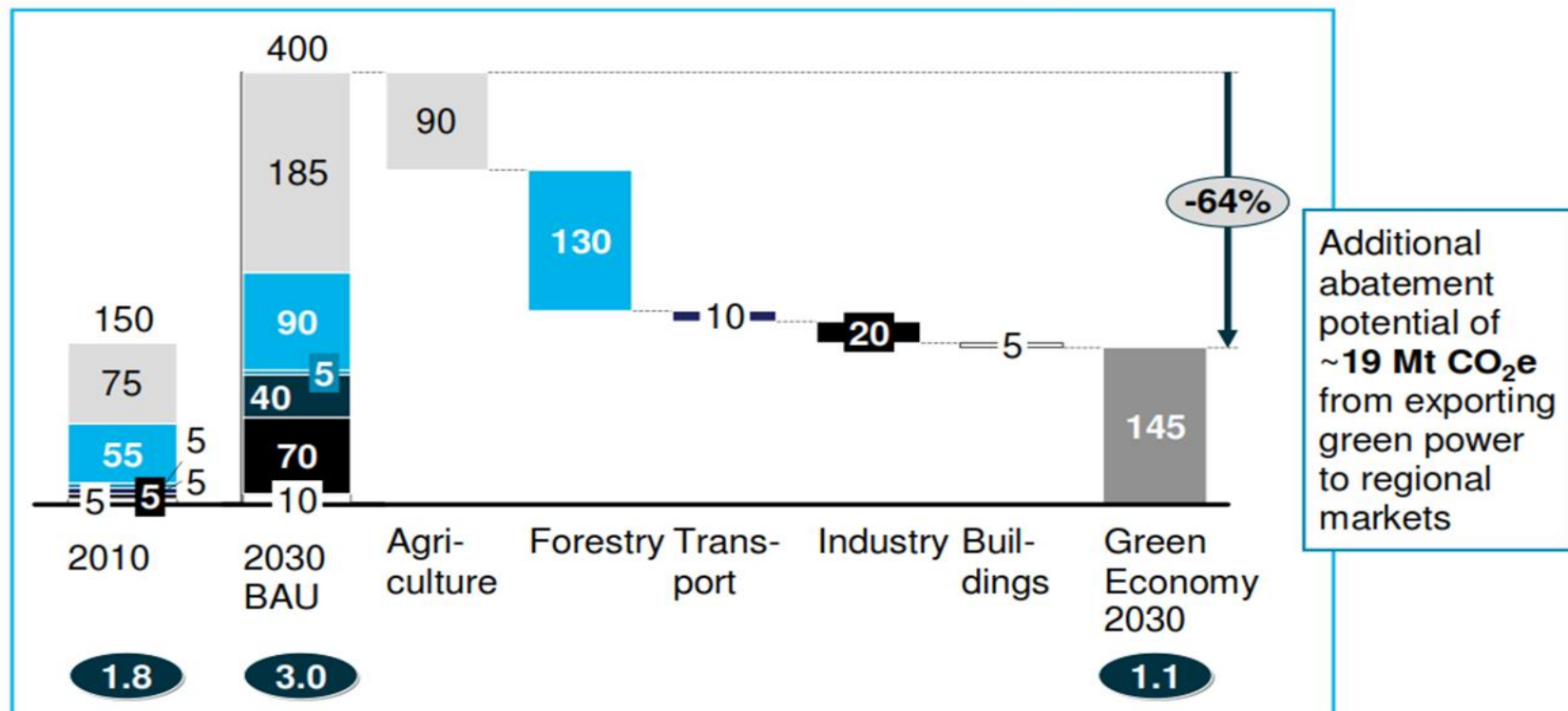
# Pillars of the CRGE

- I. Improve agricultural production activities for higher food security while reducing emissions
  - II. Protect and re-establish forests for their economic and ecosystem services
  - III. Expand renewable power generation
  - IV. Transit to modern and energy-efficient technologies in transport, industry and buildings
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# Pillars of the CRGE

Emissions per year<sup>1</sup>, Mt CO<sub>2</sub>e

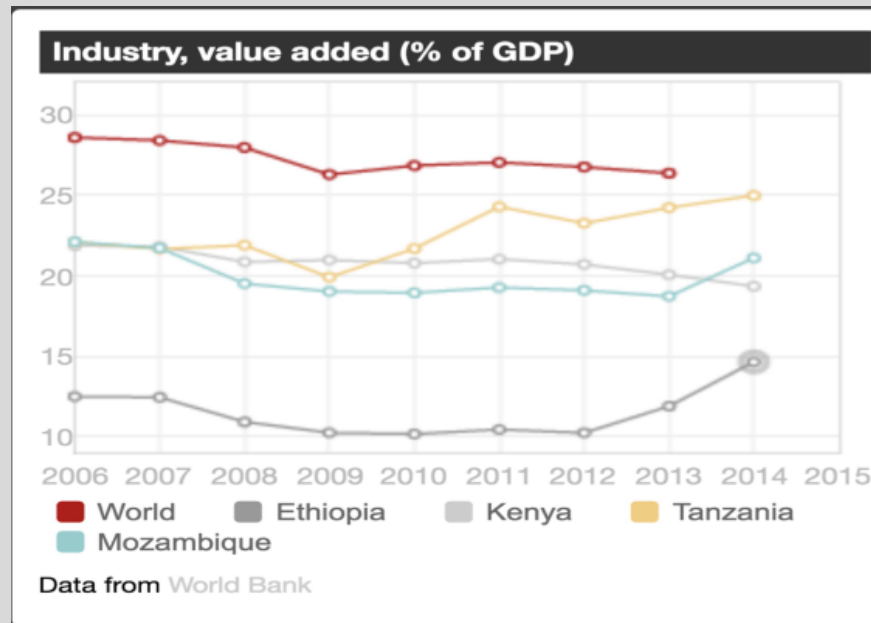
t CO<sub>2</sub>e/capita Agriculture Power Industry  
Forestry Transport Others<sup>2</sup>



<sup>1</sup> Rounded numbers

<sup>2</sup> Currently estimated emissions from buildings and waste

# Where Ethiopia is right now



Percent of people living in urban areas

Annual urban population growth

Ethiopia	19	5.4
Africa	40	1.1

170 Million by 2050!!

>> Just starting on transformation: both a huge opportunity and enormous challenge



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# Green industrialization: challenges

Access to cheap and green electricity is  
**not YET** an opportunity for green  
industrialization!



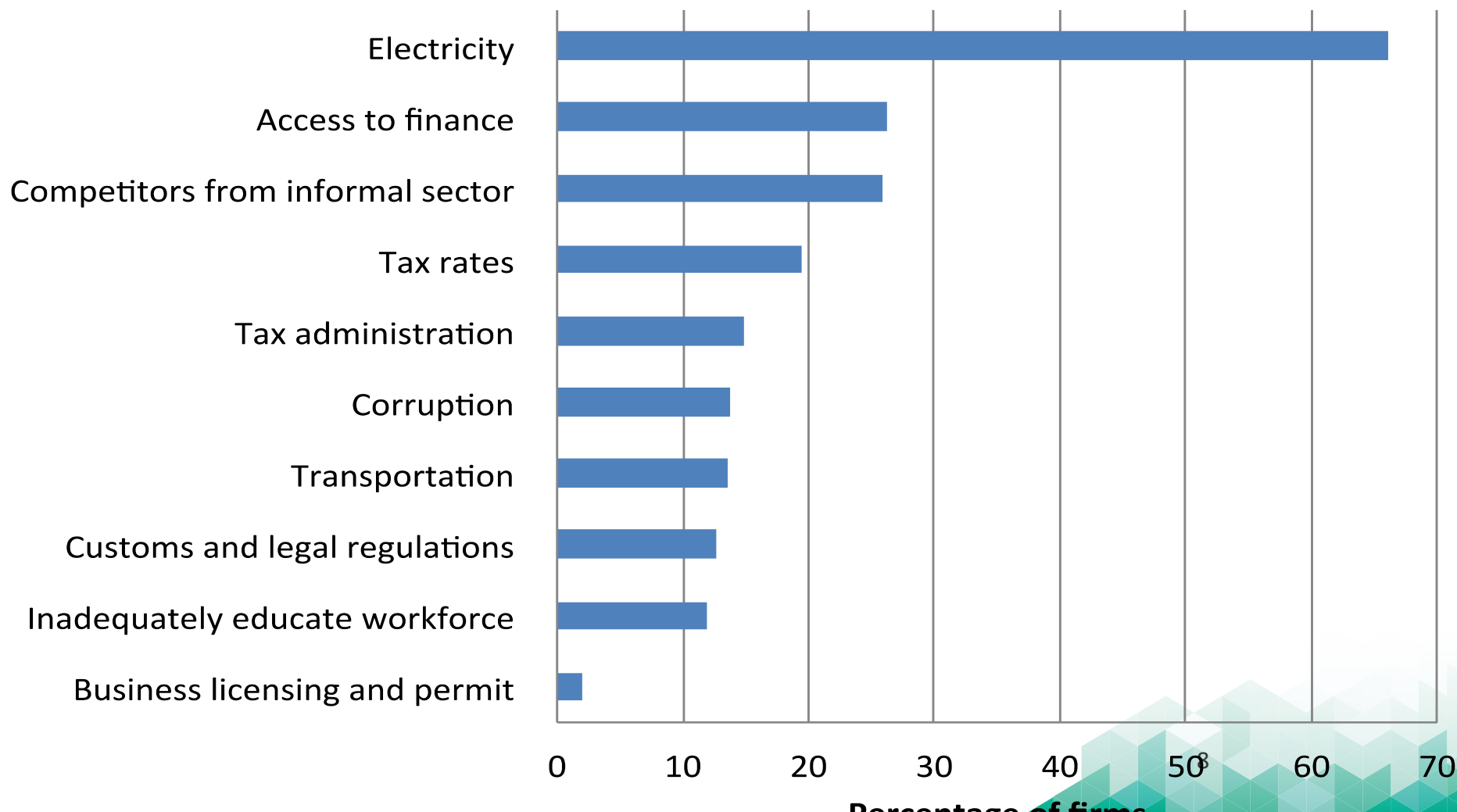
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# Green industrialization: challenges

(WBES, 2015)





# Green industrialization: challenges

## Cost of Industrial Energy Consumption in Ethiopia, 2012/13: (CSA, 2013)

Industrial group	Percentage of total energy costs		
	Electricity	Wood & charcoal	Other fuels
Food & beverages	22.0)	1.2)	76.8)
Textiles	21.9)	4.9)	73.2)
Wearing apparel	8.2)	1.6)	90.2)
Tanning & leather	35.6))	1.0)	63.4)
Chemicals & products	20.6))	6.9)	72.5)
Non-metallic mineral products	13.4)	37.3)	49.3)
Structural clay products	44.9))	0.01)	55.1)
Cement, lime & plaster	12.4)	0.07)	86.9)
Concrete, cement & plaster articles	11.1))	52.2)	36.7)

# Green industrialization: challenges

## Electricity Outage in Ethiopia's Manufacturing sector (WBES, 2015)

Number of electrical outages in a typical month	12.1
Duration of a typical electrical outage (hours)	10.5
Losses due to electrical outages (% of annual sales)	7.7
Proportion of electricity from a generator (%)	21.2



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# Green industrialization: challenges

Even at the current very low stage,  
pollution is becoming a big problem.

# Green industrialization: challenges



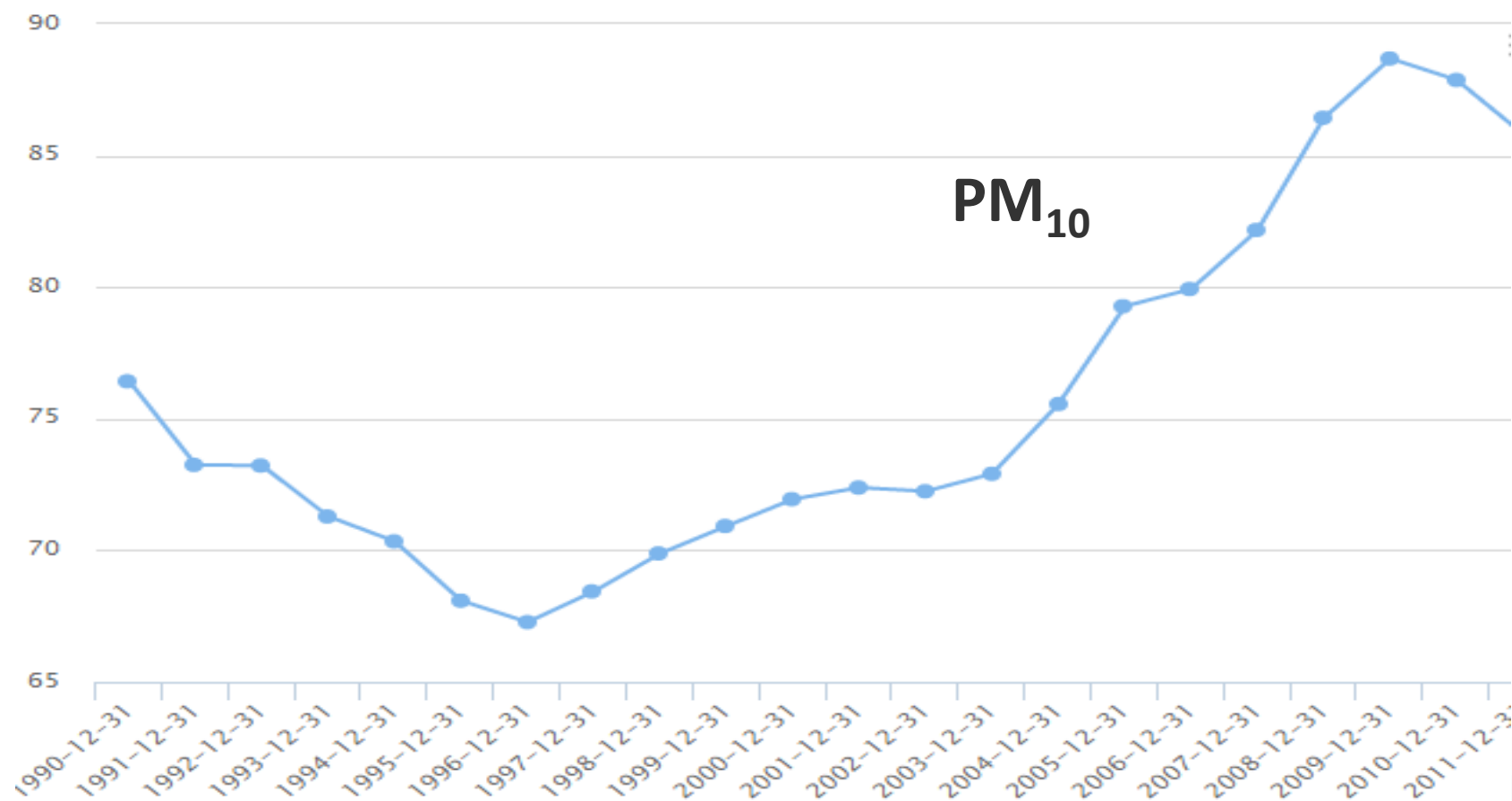
- The leather and textile industry is the source of significant water and air pollution;
- 1 847 288 m<sup>3</sup> of hazardous liquid waste and 19 150 tonnes of solid hazardous wastes were generated from industrial sectors in 2006 (EPA)
- Coffee processing plants discharge waste water into rivers that harm aquatic ecosystem;
- Footwear and leather industries discharge 547,860 m<sup>3</sup> waste to the Akaki river in Addis Ababa.



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# Green industrialization: challenges



Source: World Bank

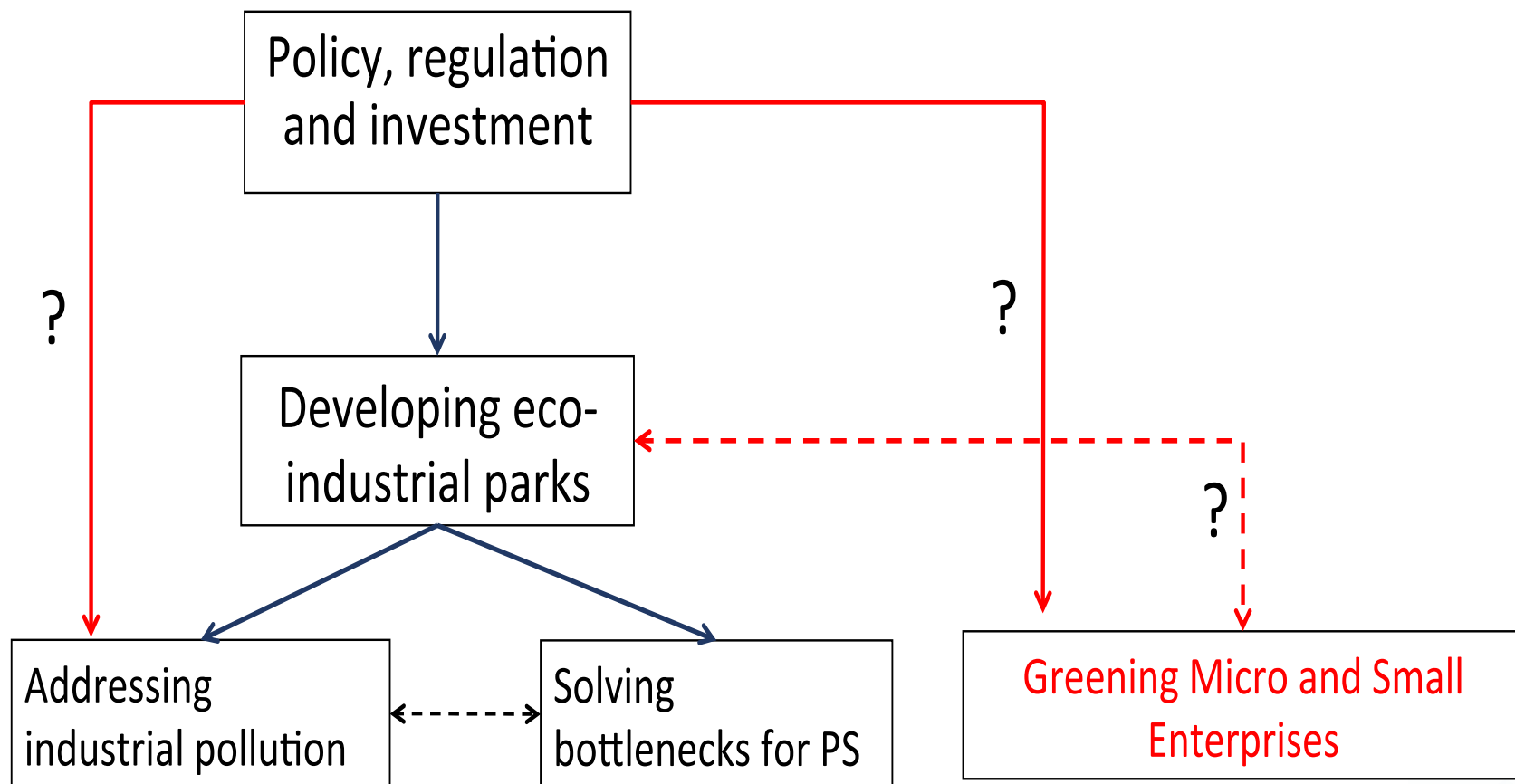
# Green industrialization: challenges

Ethiopia's main polluters are micro and medium enterprises (MSEs). Very difficult to green.

But the policy focus is on developing eco-industrial parks.

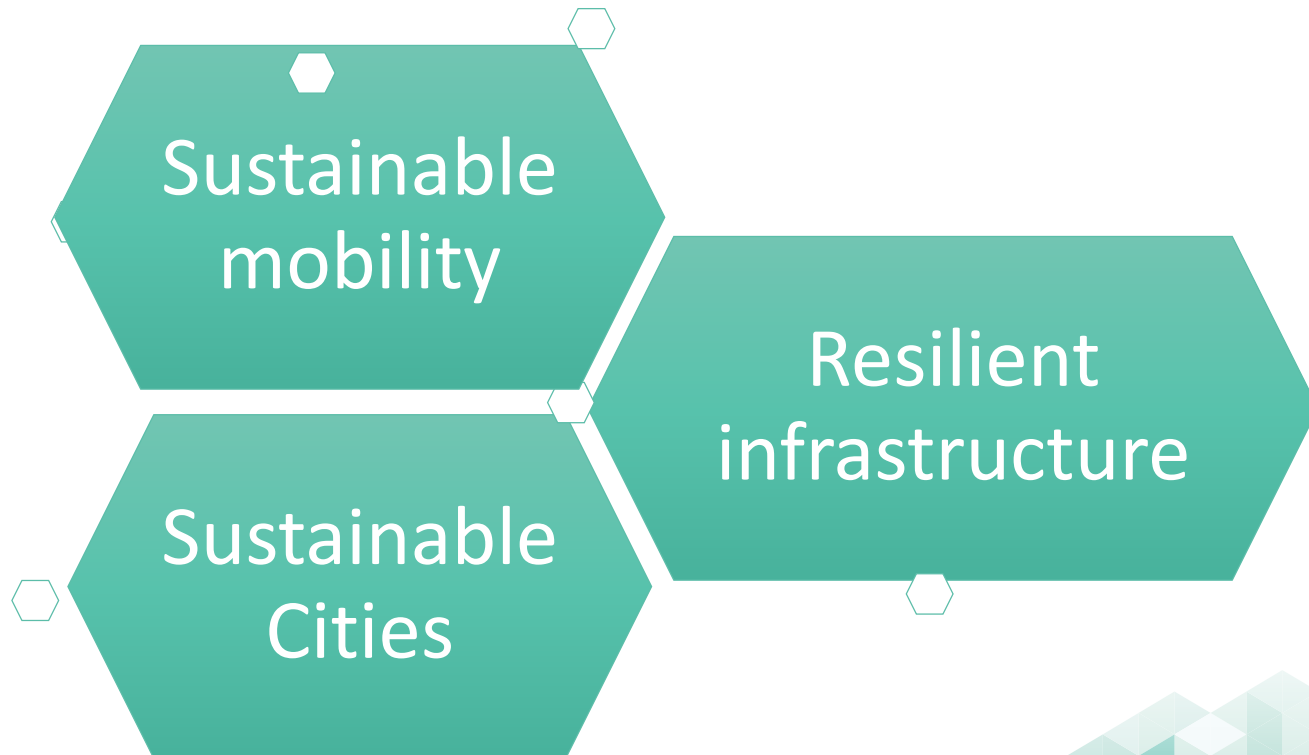
# Green industrialization: pathways

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# Sustainable urbanization: challenges

Not just about cities: important to have a holistic perspective...





# Sustainable mobility challenges



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- **Structural labor challenge** >> Ethiopia's land tenure system could be a key constraint
- **Challenges to rural-to-urban migrants** (unemployment, housing problems >> slum development)

# Cities: key challenges

## Waste

- Solid and liquid waste problems are major issues in urban Ethiopia, with households being the main source (76%).
- About 35% of the solid waste generated in Addis Ababa is dumped on open sites, drainage channels, rivers, valleys and streets; thereby greatly contributing to the pollution of rivers and streams in and around the city.
- Addis Ababa is the only city with municipal sewerage system and serves only 5% of the population.
- **There is hope: Reppi waste to energy project**

# Cities: key challenges

## Air Pollution

- Ethiopia is among the 20 worst-affected countries by indoor pollution, causing more than 72,000 deaths a year.
- There is a prevalence of 23.9% Acute respiratory infections (ARI's) among children under 5 years old.
- The main cause of outdoor air pollution is the emission from vehicles. **Very old vehicles.**

# Cities: key challenges

## Inefficient land 'market' and uncontrolled sprawl

- Allocation of land at below-market value, combined with large lot-size regulations, has led to a decline in density even as the urban population increases.
- The resulting horizontal expansion of urban areas, in Addis Ababa and secondary cities, exacerbates the challenges of providing infrastructure and services

# Cities: key challenges

It could have a lot to do with taxes and duties!

Type of car	Taxes					
	Custom tax	Excise tax	Sur tax	Vat	WHT	Cumm.
< 1300cc	35%	30%	10%	15%	3%	125%
> 1300cc & < 1800cc	35%	60%	10%	15%	3%	176.24%
> 1800cc	35%	100%	10%	15%	3%	244.55%

Tax reduction	
Service period since manufactured	Reduced amount in %
< 1 year	0%
1 year	10%
2 years	20%
3 years and above	30%

# Sustainable cities: pathways

## Planned urbanization



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PwC

### Eco-effective activity clusters

*Natural resource efficiency*  
*Climate and disaster resilience*  
*Low carbon development*

Socially productive systems

Access to social infrastructure /  
services

Culturally inclusive  
Strong rural-urban linkages

An eco effective  
city network

Engines of  
growth

### Engines of growth

*Competitive cities*  
*Access to international markets*  
*Developed and thriving MSME sector*

*A national urban  
structure that serves  
Ethiopia's development  
plan*

### Well designed places

*Infrastructure connectivity*  
*Spatially balanced urban network*  
*High urban quality of life*

Socially  
productive  
places

Well designed  
city system

# Sustainable cities: pathways

- Efficient land use planning (consider quick-planning?)
  - Investing in green and resilient infrastructure (there are clear economic gains!)
  - Reform of duty and tax rules
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