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# Low Carbon Development in Africa

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**African Climate Policy Centre (ACPC)**





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# Outline

**This presentation covers:**

Climate change in Africa

developmental challenges in

a

Carbon Development  
pathways

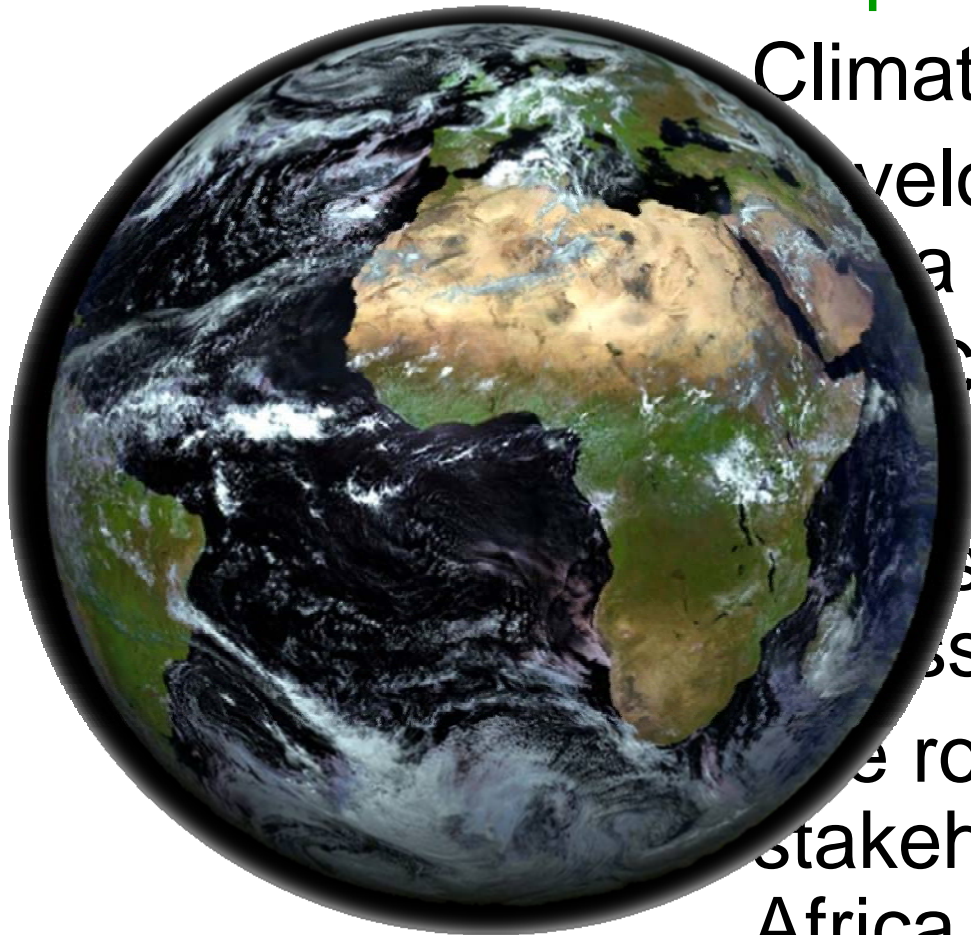
and options for LCD

in Africa

the role of various

stakeholders and ClimDev

Africa





# Observations

- The evidence of climate change is unequivocal
  - scientific findings
  - various observations
- Mitigation measures are slow and sparse
- Adaptation has started, but
- Further adaptation is now unavoidable

Without the mitigation of greenhouse gas emissions, it may be impossible to achieve meaningful adaptation where it is most needed



Agricultural changes  
(e.g. millet, maize)



Changes in  
ecosystem range  
and species location



Changes in water  
availability coupled  
to climate change



Possible changes in  
rainfall and storms



Desert dune shifts



Sea-level rise and  
possible flooding in  
megacities



Changes in health  
possibly linked to  
climate change

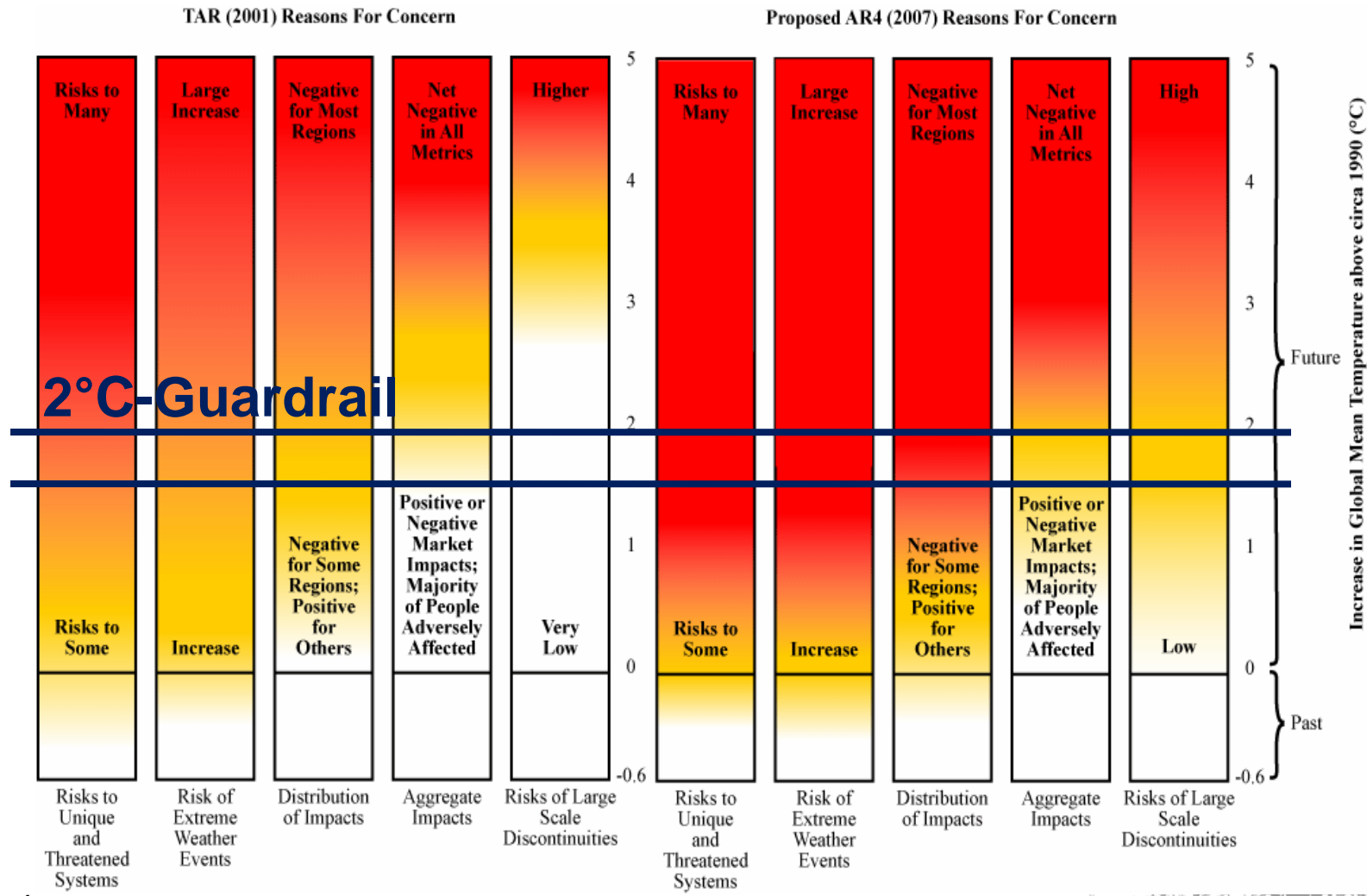


Conflict zones

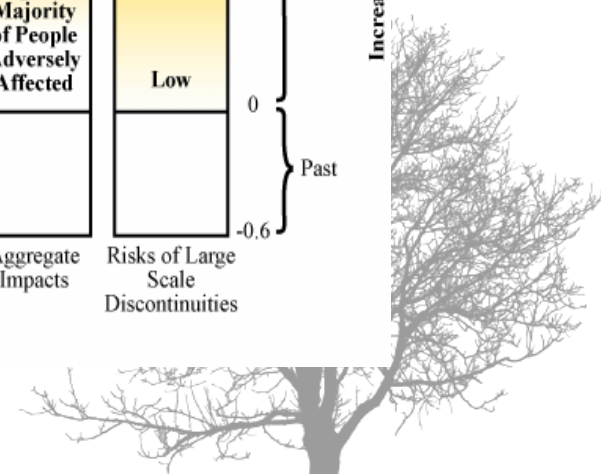




# Reasons for concern



(Smith et al. 2009 PNAS)





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# Developmental challenges in Africa

- **Poverty and achievement of the MDGs**
  - Almost half of the African population is living on less than \$1.25 dollar per day as at 2008
- **Energy transition**
  - Only about 31% of the population in Sub-Sahara Africa has access to electricity with about 14% electrification rate in the rural areas
  - Traditional biomass accounts for between 70-85% of primary energy supply in many Sub-Sahara countries
- **Economic growth and employment**
  - The economic growth experienced in the last decade has failed to generate significant employment
- **Infrastructure, urbanization and industrial development**



Source:  
<http://www.un.org/millenniumgoals/bkgd.shtml>

Africa needs to grow in order to meet these challenges and improve our performance against the MDGs

Thus for Africa development is an appropriate point of departure

Photo: Arthur Gilroy (online: SouthAfrica.to)





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# Imperative for a new direction

- Developmental challenges coupled with the impacts of climate change pose a significant threat to socio-economic development in Africa
- The imperative for Africa is to follow a development pathway that promotes:
  - Poverty reduction, economic growth and enhancement of human wellbeing
  - Increased resilience to the physical impacts of climate change
  - Mitigation and/or avoidance of potential increases in GHG emissions that will arise from future development

**A Low Carbon Development pathway offers an alternative route to meeting these objectives**





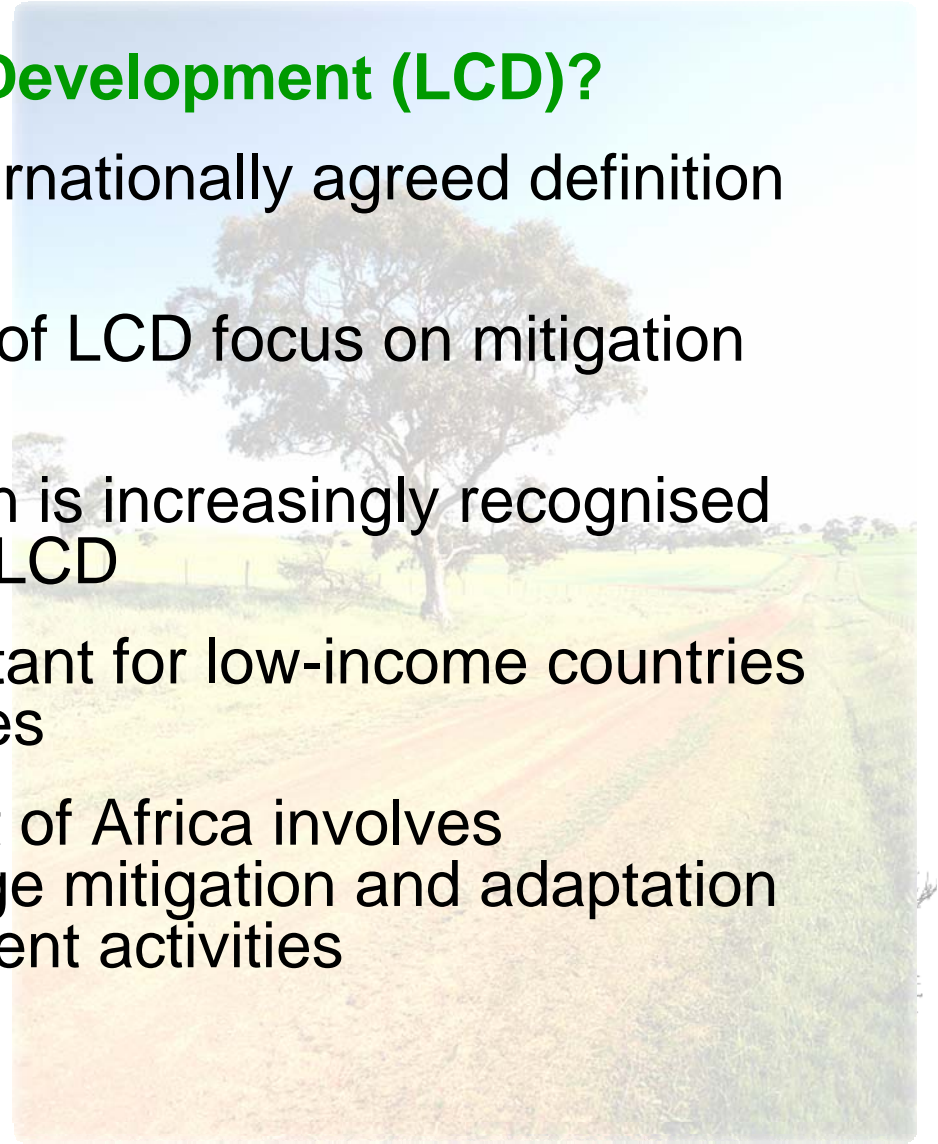
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# Low Carbon Development

## But what is Low Carbon Development (LCD)?

- There is currently no internationally agreed definition of LCD
- Most existing definitions of LCD focus on mitigation of GHGs
- More recently, adaptation is increasingly recognised as an important issue in LCD
- This is particularly important for low-income countries including African countries
- Thus, LCD in the context of Africa involves integrating climate change mitigation and adaptation strategies into development activities





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# Low carbon development

LCD in its most basic sense, is a balance of  
development options in terms of carbon



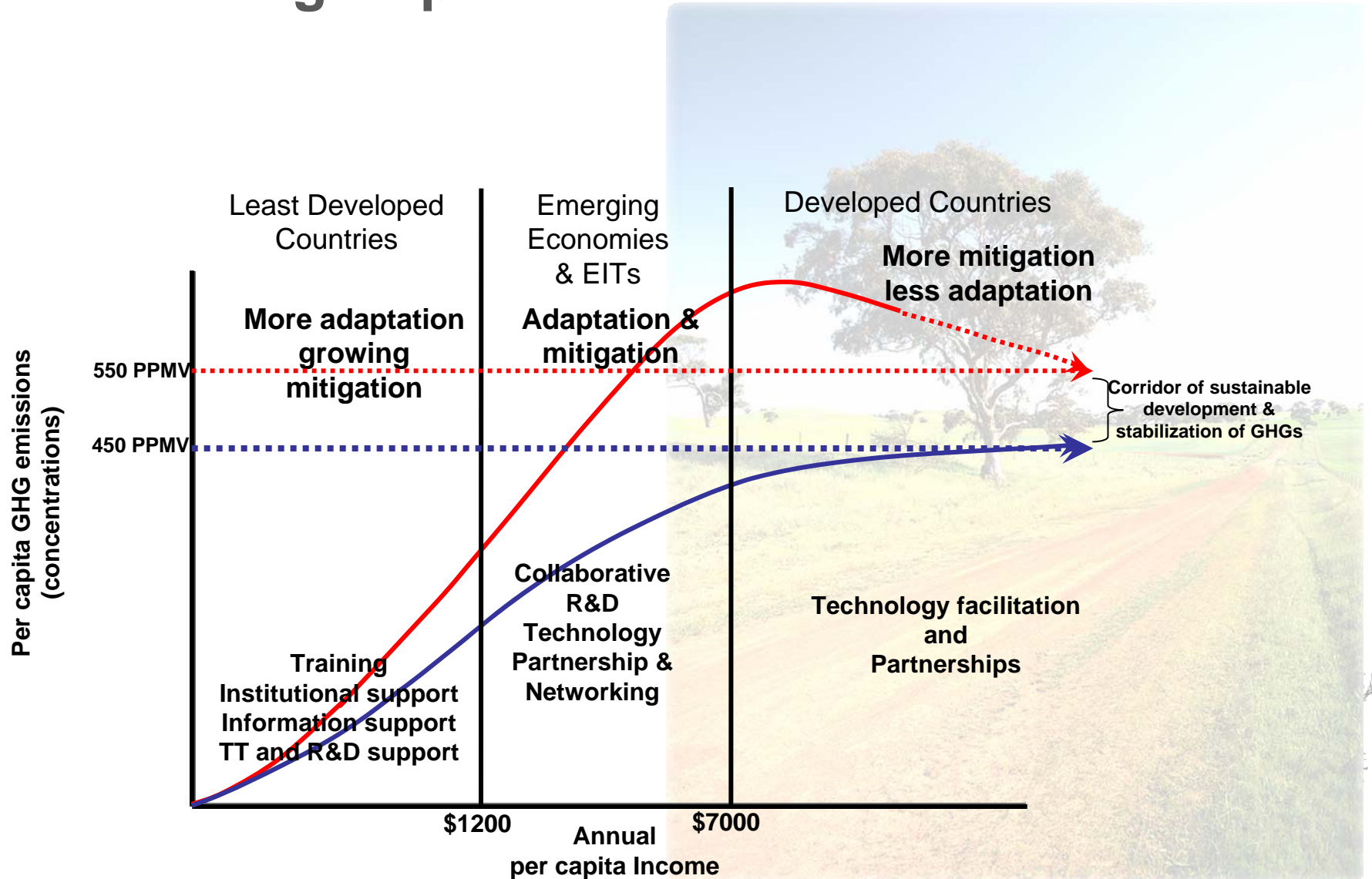




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# LCD pathways differ each country and income group as there is no one size fits all

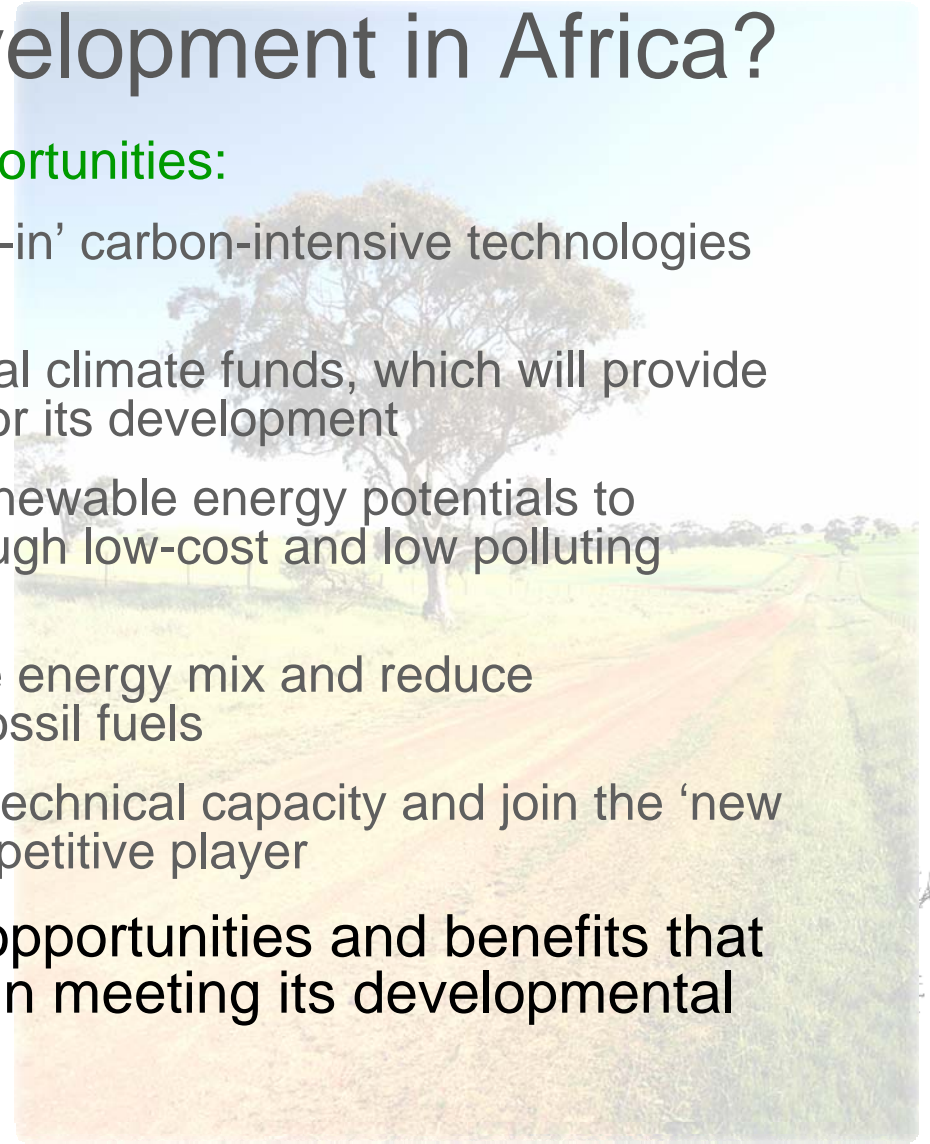


# Low Carbon Development (LCD)

## Why low carbon development in Africa?

LCD will offers Africa a range opportunities:

- Opportunity to avoid ‘locking-in’ carbon-intensive technologies into future development
  - Opportunity to ‘tap’ into global climate funds, which will provide the much needed finances for its development
  - Opportunity to utilise vast renewable energy potentials to improve energy access through low-cost and low polluting technologies
  - Opportunities to diversify the energy mix and reduce dependence on expensive fossil fuels
  - Opportunity to build its own technical capacity and join the ‘new development’ race as a competitive player
- In Africa, LCD is about the opportunities and benefits that could be derived from LCD in meeting its developmental challenges



# Low Carbon Development (LCD)

## Mapping out LCD pathways:

- LCD frameworks should focus on:
  - Specific economic and social development needs of the country
  - Tackling climate change
- LCD by its nature is cross-sectoral
  - Sectoral (and cross-sectoral) approach offers an integrating agenda
  - Strengthen cross-sectoral linkages and impacts
- Not all trade-offs can be avoided
- Low-carbon development strategy should embrace all key infrastructure beyond the energy
- Agriculture, forestry and land-use change - most important source of GHG in low-income countries
  - Prioritising will be critical
  - But need to be guided by future development needs too
- Moving on to LCD pathway is likely to entail higher resource costs initially
  - On grounds of equity, those extra costs should be borne largely by today's rich countries until a new internal investment dynamics is created. But are they willing?

# Low Carbon Development (LCD)

## Mapping out LCD pathways:

- LCD pathways depend on what natural resources are available
- Countries with high fossil fuels usually concentrate on 'cleaner' fossil fuel technologies
  - e.g. CCS, ECT, low-emission vehicles, etc
- Countries with low fossil fuels usually promote renewable energy
  - e.g. bio-fuels, solar, hydro, etc
- Countries with huge forest resources concentrate on sustainable forestry and land management
- Countries with low agricultural productivity concentrate on improving agricultural land efficiency

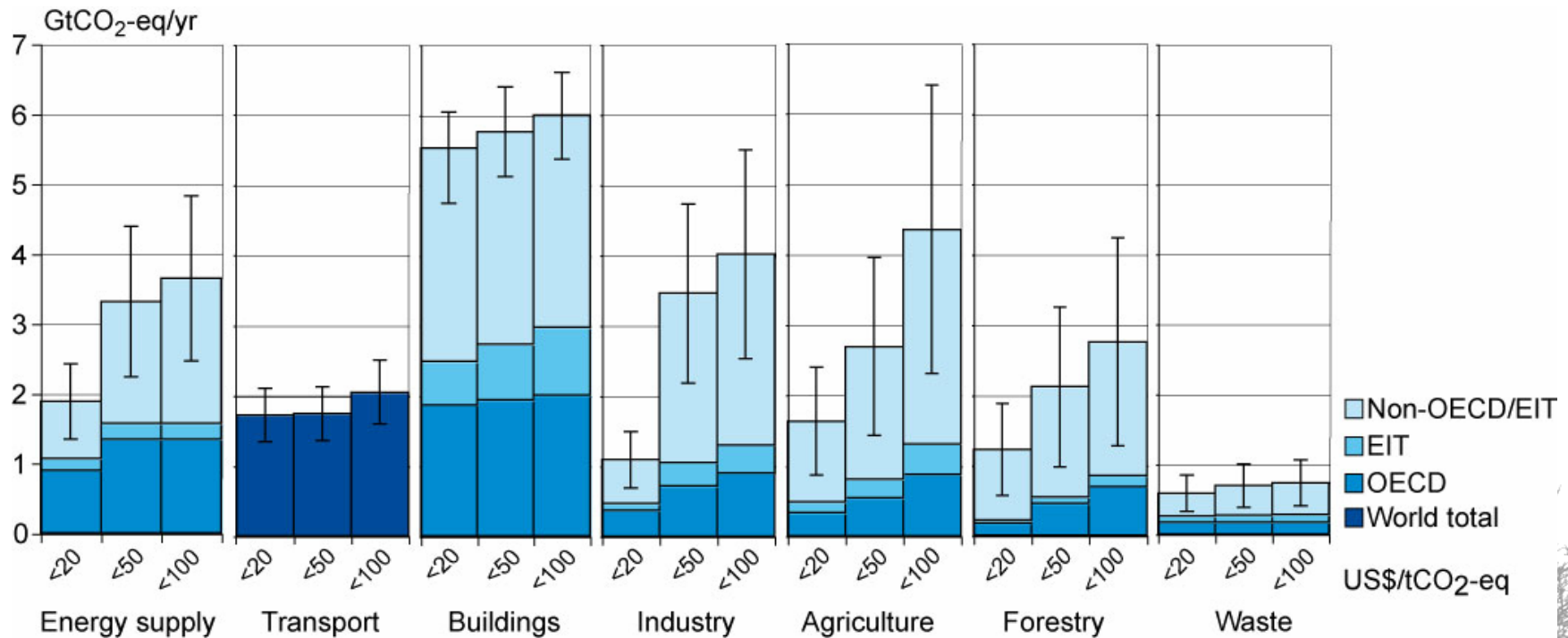




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# All sectors and regions have the potential to contribute to GHG mitigation/avoidance and transition to low carbon economy



IPCC, AR4

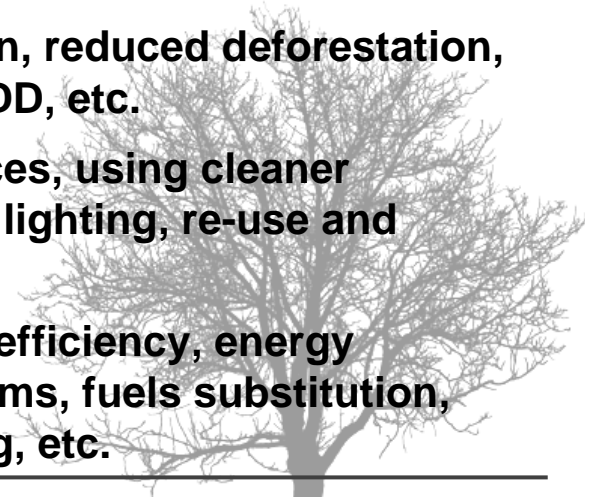


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# Options for low-emission and climate-resilient development

Sector	Low-emission and climate-resilient strategies
<b>Energy</b>	Use of renewable energy, use of 'cleaner' fossil fuels, use of improved fossil fuel technologies, improving energy efficiency, ending gas flaring, etc.
<b>Transport</b>	Use of low emission vehicles, use of cleaner fuels, improving road infrastructure, promotion of public transport, use of smaller cars, etc.
<b>Agriculture</b>	Climate-resilient crops, improved cultivation practices, improve sustainable agricultural productivity, water management, etc.
<b>Land use change and Forestry</b>	Land management, reforestation, reduced deforestation, agro-forestry management, REDD, etc.
<b>Households</b>	Use of energy-efficient appliances, using cleaner technologies for cooking, solar lighting, re-use and recycling of materials, etc.
<b>Industry</b>	Improved energy and resource efficiency, energy conservation, use of CHP systems, fuels substitution, materials substitution, recycling, etc.



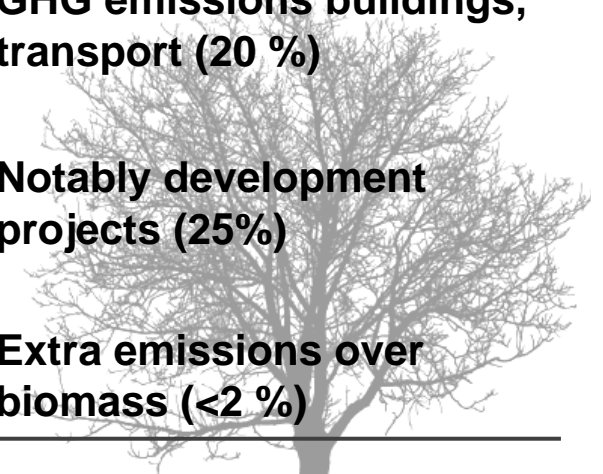


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# Sectoral policies can have an impact on climate change and development at all levels

Sectors	Sectoral policy options for LCD	Possible influence (% of global emissions)
<b>Macro-economy</b>	Taxes, subsidies, other fiscal policies	All GHG emissions (100 %)
<b>Forestry</b>	Forest protection, sustainable management	GHGs deforestation (7%)
<b>Electricity</b>	Renewable energy, demand management, decreasing losses transport,/distribution	Electricity sector emissions (20 %)
<b>Oil-imports</b>	Diversification energy sources/decrease intensity -> enhance energy security	GHGs from oil product imports (20 %)
<b>Insurance buildings, infrastructure</b>	Differentiated premiums, liability conditions, improved conditions green products	GHG emissions buildings, transport (20 %)
<b>Bank lending</b>	Strategy/policy, lending projects accounting for options emission limitations	Notably development projects (25%)
<b>Rural development</b>	Policies promoting livelihoods protection and local economic development	Extra emissions over biomass (<2 %)





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## 1. Lets start with development priorities, and:

- aim to meet development and poverty eradication objectives
- use strategies that transform threats to opportunities

## 2. Lets explore existing development initiatives that are climate resilient and friendly:

- there exist a diversity of local actions, national policies that have delivered positive development and climate outcomes
- we can explore such options at various levels
- we can scale them up coupling with international initiatives to enhance their impacts

## This is “development first”:

An approach that stimulates concrete actions, mainstreaming, strong and inclusive climate actions and cooperation at global, regional and local levels







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- **Policy barriers**
  - Lack of policy responses
- **Regulatory & Institutional barriers**
  - Lack of effective regulations
  - Low capacity to manage climate risks
- **Financial barriers**
  - Poverty
  - Insufficient capital flow
  - High initial capital costs
- **Market barriers**
- **Technical barriers**
  - Low technical skills and capacity
- **Information barriers**
  - Low public and institutional awareness
  - Lack of climate information





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- **Policy**
  - Mainstream climate change policies into development activities
- **Regulatory & Institutional**
  - Establishment of standards e.g. emissions and efficiency standards
  - Climate proofing investments
  - Capacity building in the public and private sector to assess and manage climate risks
- **Financial**
  - Strengthen financial and capital markets
  - Capacity building for international finance sourcing
- **Market**
  - Improve investment climate
  - Creation of new markets (e.g. CDM)
  - Adequate pricing of energy, water and agricultural products
  - Tax incentives





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# We all have a role to play

## Low Carbon Development

### Policy Community

*Elected officials, ministries, community representatives, researchers etc*

- Set the vision for a LCD future
- Set the LCD pathway
- Set legislation across different sectors
- Set National Development Plans
- Develop infrastructure
- Support climate change negotiations

### Practice Community

*Businesses, communities and civil society incl'ing NGOs, community orgs*

- Undertake economic, social and environmental activities
- Contribute to development through practical action
- Respond to laws, opportunities and other changes... leaving a footprint

### Research Community

*Universities, research institutes, researchers, consultants etc*

- Explore society, the economy and the environment, including climate
- Study interactions between society, the economy and the environment
- Generate knowledge on LCD options

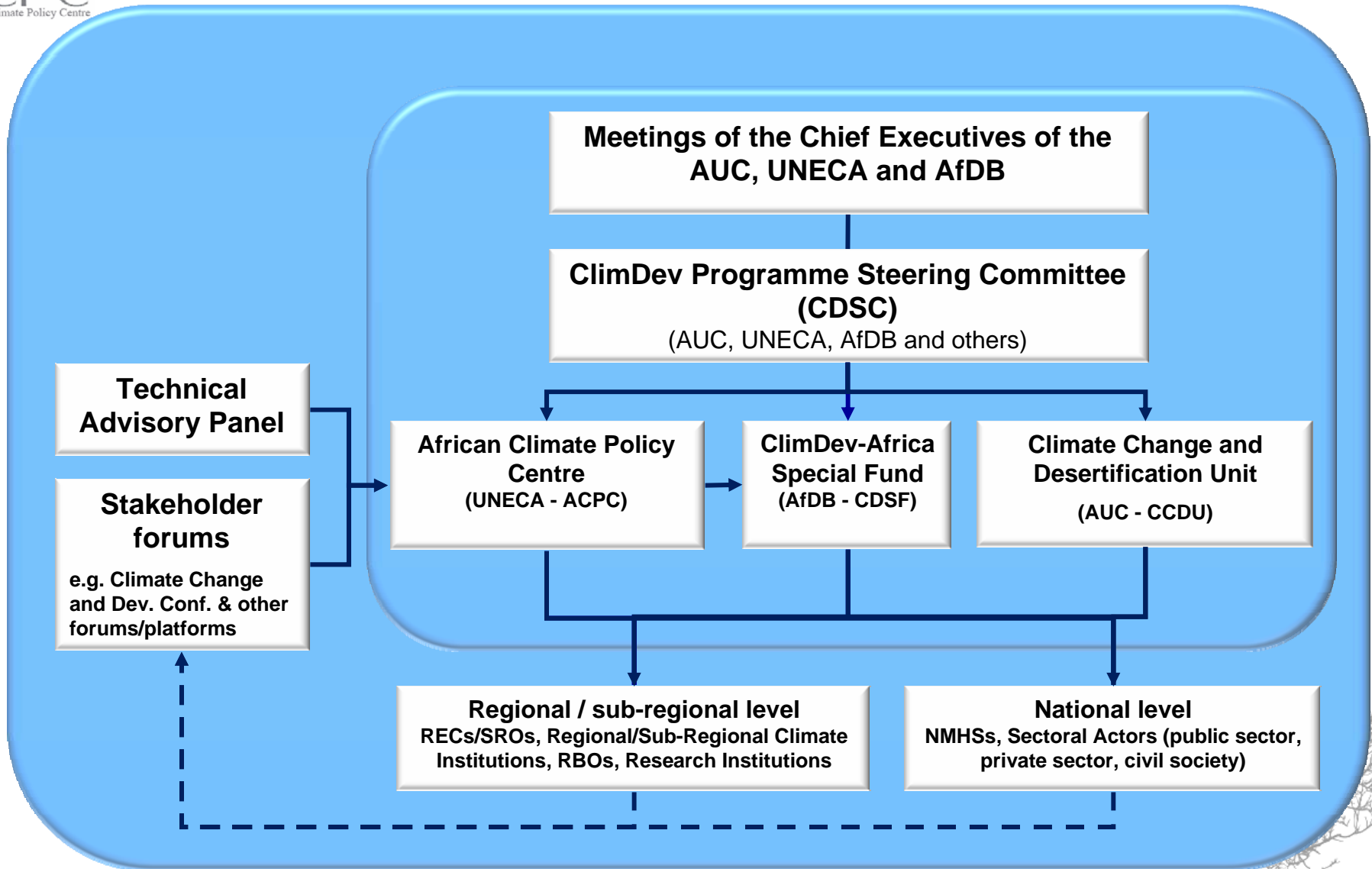




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# ClimDev-Africa Programme





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# The ACPC Climate and Dev.

## Climate and Development

Policy Community

Practice Community

Research Community

- Knowledge generation and sharing
- Advocacy and consensus building
- Technical coop'n and capacity dev.

- Frameworks, strategies, plans
- Case studies and examples
- Research and partnerships

## ACPC

Climate finance and economics

Climate resilient development

Low carbon development

Climate science, data and information



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# Thank you

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