The Political Economy of Green Growth in Southern Africa
• Recall the **need** for development

• Global economy facing a series of crises which **interact** in ways we are yet to fully understand (the triple crisis)

• Also: growing recognition of the importance of **extreme events**

• And recent experiences have heightened **uncertainty**
Shifting means and variation

Change in global average surface temperature

Source: MIT Joint Program Report #180
Webster et al. (2010)
Policy challenges

1. **Mitigation policy**: steps at the **global** level to reduce emissions of GHGs and hence climate warming and uncertainty

2. **Adaptation strategy**: steps at the **national** level to reduce vulnerability to climate shocks and sustain economic development
Two UN Initiatives

• The 17th conference of the parties of the United Nations Framework Convention on Climate Change (UNFCCC)
  – COP17 in Durban 2011

• UN Conference on Sustainable Development (UNCSD)
  – Rio+20 Earth Summit in 2012
Three basic questions/topics

• What does “low-carbon” mean for development?
• How should we approach new “green technologies” in developing countries?
• What does green growth mean for existing development objectives?
  – Win-win or trade-offs?
Low carbon development

Past and future carbon emissions (CO₂ equivalents)

• On a per capita basis most emissions currently come from the OECD countries
• But most emission growth come from developing countries
• Finding low-carbon growth paths a key challenge

Current CO₂ emissions, 2007

New CO₂ emissions, 1960-2007

Source: WIDER “Green Growth in Development” (Davies et al., 2011)
Low carbon development

Energy use vs. Carbon emissions

Emissions per capita =
Energy use per capita x Emissions per energy unit

So countries may have high emissions per capita when they...

Use a lot of energy (i.e., electricity and petroleum)
AND/OR
Use ‘dirty’ energy (i.e., coal, crude oil and gas)
Low carbon development – stylized facts about Energy use vs. Carbon emissions

- Energy use rises with income
- So reducing energy use in low-income countries means stalling development

- Emissions rise then fall with income
- Poor emit little
- Industrializing countries use cheap and dirty energy
- Rich can afford cleaner energy

Source: WIDER “Green Growth in Development” (Davies et al., 2011)
Note: Energy use in oil equivalents. Income is log of per capita GDP; Energy and Emissions are deviations from mean logged values
Low carbon development
Finding a new growth path

• Economic development means that global energy use will definitely rise
• A key emphasis must be on clean energy options for low-income countries

Source: WIDER “Green Growth in Development” (Davies et al., 2011) Note: Energy Use and Emissions are deviations from mean logged values.
Conceptualizing the “Green” Dimension

• Green economy –
  – “results in improved human well-being and social equity while significantly reducing environmental and ecological scarcities” (UNEP)

• Green growth –
  – “fostering economic growth and development while ensuring that natural assets continue to provide resources and environmental services on which our well-being relies” (OECD)
    – “environmentally sustainable economic progress to foster low-carbon, socially inclusive development” (UN-ESCAP)

• Suggest that green growth is a win-win strategy
Win-Win Perspective is Questionable

- Green growth discourse is often couched on successful micro- or project-level interventions

- But once scaled-up, a green growth strategy resembles a major and complex policy reform, comparable to structural adjustment

- It involves short-term economic and political costs for the promise of long-term rewards
  - Requires countries to deviate from their comparative advantage and sometimes abandon the returns from past investments
  - May require adopting more expensive technologies that redirect scarce resources away from addressing other development priorities
  - Often the rural and urban poor, who are key electoral constituencies, lose out in the short-term
Case Selection

• Focus on three countries in Southern Africa facing three major development issues (electricity, food and fuel):

• Electricity and coal in South Africa
  – Middle-income, mineral rich

• Food security and fertilizers in Malawi
  – Low income, agriculture-dependent, land scarce

• Biofuels and land clearing in Mozambique
  – Low income, agriculture-dependent, land abundant
Case 1: Electricity in South Africa

Socioeconomic Context

• Post-Apartheid government inherited high unemployment and a massive service delivery gap (i.e., water, sanitation, energy, etc.)

• Electricity demand projected to double over the next two decades
  – Connecting previously disadvantaged population groups
  – Rising incomes and urbanization
  – Industrial expansion, esp. mining and heavy industries

• South Africa generates 94% of its electricity from coal
  – Coal is cheaper and more reliable than renewables (e.g., solar, wind)
  – Explains why South Africa the 13th largest GHG emitting country

• What is needed are greener energy sources
  – Government has committed to a 42% reduction in GHGs by 2025
Case 1: Electricity in South Africa

*Green Growth Scenario*

- Adopting a Green Growth scenario means...
  - More renewables
  - More installed system capacity and higher investment costs
  - Higher electricity tariffs (and a carbon tax?)
  - Massive structural adjustments to the economy

![Graph showing new system capacity and total cost comparison between Business-as-usual plan and Low-emissions plan.](source: IRP2 (2011))
Case 1: Electricity in South Africa

Political Economy Pressures

• We have already witnessed the concerns of key interest groups
  – Blackouts in 2008 led to new investments and higher electricity tariffs
  – And to large-scale demonstrations by civil society and trade unions

• So there is strong political resistance to a Green Growth path
  – Industry groups worry about competitiveness
  – Trade unions worry about job losses
  – Civil society worries about rising energy prices for the poor

• As with SAPs, maintaining support for reforms will be crucial, and so the government will have to:
  – Limit the effects of tariff increases on the poor (e.g., subsidies)
  – Support firms and workers during the transition (i.e., tax credits and job retraining)
Case 2: Food Security in Malawi

Background Context

• Food insecurity is a perennial threat in Malawi
  – Agricultural intensification is unavoidable
  – Due to poor soil fertility, fertilizers will be necessary

• President Bingu wa Mutharika launched AISP (FISP) in 2005
  – Improved food security and agricultural exports
  – Adheres to calls for an African Green Revolution
Case 2: Food Security in Malawi

Environmental Challenge

- Nitrous oxide fertilizers pose huge risks to environment
  - Fertilizers are largest single source of GHG emissions from agricultural sector
  - Fertilized lands use more water
  - High levels of fertilizer increase toxins in groundwater

- OECD argues that fertilizer subsidies create a number of negative environmental externalities

- Yet, alternatives, including conservation farming, organic fertilizers, and inter-cropping, have not proved very viable
Case 2: Food Security in Malawi

Political Economy Challenges

Distribution of Direct Contributions for the FISP

<table>
<thead>
<tr>
<th>Year</th>
<th>Government</th>
<th>Donors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005/6</td>
<td>51.4</td>
<td></td>
</tr>
<tr>
<td>2006/7</td>
<td>81.4</td>
<td>9.5</td>
</tr>
<tr>
<td>2007/8</td>
<td>109.6</td>
<td>7.1</td>
</tr>
<tr>
<td>2008/9</td>
<td>227.8</td>
<td>37.8</td>
</tr>
<tr>
<td>2009/10</td>
<td>101.1</td>
<td>20.2</td>
</tr>
</tbody>
</table>

Source: Dorward & Chirwa 2011

Election Year
Case 3: Biofuels in Mozambique

Background Context

• Mozambique’s comparative advantage is land abundance
  – Only 12 percent of arable land under cultivation
  – Favorable agro-ecological conditions

• Though some success in export crops, Mozambique historically has focused on subsistence farming
  – Approximately 70 percent of country’s population is rural
  – Recently experienced stagnating agriculture, with attendant impacts on poverty

• Traditionally dependent on oil imports
  – Government expended 17% of GDP on fuel and energy as of 2007
Case 3: Biofuels in Mozambique

*Background Context*

- In 2004 election campaign, during a period of volatile oil prices, Government began encouraging cultivation of jatropha for biodiesel
- Subsequently, a Commission on Biofuels also recommended ethanol production from sugarcane, sorghum and cassava
- By 2009, publication of National Biofuels Policy and Strategy (NBPS)
  - Stated the industry would create 150,000 new jobs
  - Now more than 30 biofuels projects with total investment of 100 million USD
Case 3: Biofuels in Mozambique

*Environmental Challenge*

- Biofuels pose a number of threats to the environment
  - Land degradation, water pollution, mono-cropping, and over-use of water sources
  - Contributions to GHGs through deforestation
  - Since little land is under cultivation in Mozambique, a large amount of land clearing will be needed for biofuels projects

- Green Growth strategy would involve a greater focus on ethanol (i.e., plantation-based sugarcane) rather than biodiesel because smallholder jatropha is more land-intensive
Case 3: Biofuels in Mozambique

Distributional Concerns

• However, jatropha is much more pro-poor than sugar cane
  – Relies on unskilled smallholders while sugar cane is more capital-intensive and cultivated on plantations
  – Research by Arndt et al. (2009) shows that a jatropha-driven biofuels strategy can reduce poverty in Mozambique by almost twice as much as a plantation-based sugarcane scenario

• A Green Growth strategy therefore deviates from the Government’s objectives to create jobs and assist the rural poor
### Summary of Adjustment Costs

<table>
<thead>
<tr>
<th></th>
<th><strong>Current strategy</strong></th>
<th><strong>Green Growth strategy</strong></th>
<th><strong>Short-term costs</strong></th>
<th><strong>Losers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>South Africa</strong></td>
<td>Invest in coal-fired electricity to support heavy industries</td>
<td>Shift to renewable energy sources</td>
<td>Higher electricity prices</td>
<td>Poor consumers</td>
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<td></td>
<td></td>
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<td>Job losses in mining and heavy industries</td>
<td>Unionized workers</td>
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<td>Mining and metals industries</td>
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<td><strong>Malawi</strong></td>
<td>Promote agricultural intensification based on fertilizer input subsidies</td>
<td>Shift to conservation farming, organic fertilizers, micro-dosing, and inter-cropping</td>
<td>Falling production while smallholders change farming behaviors</td>
<td>Current ruling party</td>
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<td></td>
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<td>Loss of handouts to rural voters</td>
<td>Private suppliers of fertilizer</td>
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<td></td>
<td></td>
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<td></td>
<td>Poor smallholders who cannot adapt</td>
</tr>
<tr>
<td><strong>Mozambique</strong></td>
<td>Agricultural extensification based on cultivation of feedstock crops for biofuels.</td>
<td>Reduce land clearing by either shifting towards plantation-based production or promote smallholder agricultural intensification</td>
<td>Fewer rural employment opportunities</td>
<td>Poor rural farmers</td>
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Conclusions (1)

• Finding greener growth paths for low-income countries is a global necessity, but it does create a number of critical challenges.

• Green Growth policies are comparable to other major and complex policy reforms, such as structural adjustment.

• Developing countries are asked to...
  – Reorient current strategies in order to achieve long-term benefits.
  – Undergo large-scale structural transformation.
  – Risk hurting the poor and vulnerable populations.

• There will inevitably be trade-offs between green growth and existing development objectives and adjustment is associated with complex political economy processes (short vs long term, winners vs loosers).
Conclusions (2)

• While green technologies may complement development, associated investment must be carefully appraised – not always optimal

• Green growth must be incorporated into – but should not replace – existing poverty focused development strategies

• Experience of past structural adjustment initiatives cautions against ignoring trade-offs and political economy considerations

• Implies an important role for foreign assistance:
  – Facilitate transfer of green technologies and skills
  – Protect losers from adjustment costs and limit political resistance to reforms
  – Finance higher development costs and consider the implications of de-prioritizing other development goals