Health & Equity in a Green Economy

Making the link to Climate Change and Development
Key Messages

• Climate mitigation can be pro-poor, with large health and equity co-benefits:
  – Slum redevelopment; healthier housing
  – Healthier and more equitable urban mobility & cities;
  – Healthier, safer & better access to energy for homes and health care facilities lacking access to energy.

• These opportunities are largely unrecognized by either Health or Climate Sectors.

• The Health Sector can play a unique role in identifying climate and green economy policies with greatest health equity benefits.

• ImplementationSCALE up of healthy CC policies require more Health Sector Involvement & improved Climate Finance
This Presentation

1. Global health, equity, climate & development challenges
2. How green economic approaches can make a difference to health & equity – WHO's Health in Green Economy initiative
3. Housing & Urban development – Optimizing the opportunities for health and equity
4. Barriers to implementing healthy and green sectoral policies
I. Global health equity, development & climate challenges
Projects main causes of death, worldwide, all ages, 2005

- Communicable diseases, maternal and perinatal conditions, and nutritional deficiencies 30%
- Cardiovascular diseases 20%
- Cancer 13%
- Chronic respiratory diseases 7%
- Diabetes 2%
- Other chronic diseases 9%
- Injuries 9%

TOTAL DEATHS 2005
58 million

- 2 in 3 deaths are from NCDs; 80% of burden in low/middle income countries
  - Cardiovascular disease, mainly heart disease, stroke
  - Cancer
  - Chronic respiratory diseases
  - Diabetes
  - Injuries

- TB, VL, Chagas, Malaria, HIV/AIDS remain major problems in low/middle income countries
Environment <25% of health risks
Prevention <5% health investment

Each year from 2000-2008:

- Life expectancy rose 0.5%
- Health costs rose 6%

Factors influencing health

World-wide health expenditures

Source: Estimated from OECD, WHO, and Prevention Institute data
Need to re-focus on primary prevention of health risks

Examples:
- Clean water and sanitation
- Eliminating indoor smoke
- Healthy housing and transport

Primary prevention means unhealthy condition never occurs
Global Health Challenge: Climate Change

- **Water quality and quantity**: doubling of people living in water-stressed basins by 2050.
- **Food security**: In some African countries, yields from rain-fed agriculture may halve by 2020.
- **Control of infectious disease**: Increasing population at risk of malaria in Africa by 170 million by 2030, and at risk of dengue globally by 2 billion by 2080s.
- **Protection from disasters**: exposure to coastal flooding increasing by a factor of 10, and land area in extreme drought by a factor of 10-30.
- **Heat waves**: increasing NCD mortality
Climate Change's Health Impacts
- unfairly distributed

Cumulative emissions of greenhouse gases, to 2002

WHO estimates of per capita mortality from climate change, 2000

Development trends & inequities

- Urban population is doubling worldwide – & most growth is in poor cities
- Most of Africa and Asia will be living in cities by 2050
- Slums comprise 40% of urban growth globally
- **Extreme weather** – Poor development of cities and coastlines exacerbates impacts on poor from heat waves, energy outages, flooding & storms
Burden of Disease impacts related to poor urban development

1. Physical inactivity - 3.2 m deaths yr
2. Urban air pollution -1.2 m deaths yr
3. Traffic injuries-1.3 m deaths yr (mostly pedestrians)
II. How Green Economic approaches can make a difference to health and equity
'Health in a Green Economy': Example of Health Sector's unique contribution

- How climate and green policies can enhance health equity
- Best policy options for health
- Risk management measures
- Monitor impacts on health risks and outcomes
- Empower health sector, civil society, governments and industry
Review of IPCC mitigation strategies for health & equity impacts

Finding: The 'best' climate solutions address key social determinants of health/inequities
Example 1. Clean cookstoves for the world's forgotten 3 billion that use biomass/coal

- Can avert 1 million deaths/yr among poor women from COPD & lung cancers
- Nearly 1 million childhood pneumonia deaths
- Reduce time spent fuel gathering
- Promote development & gender equity
- Reduce pressure on forests
- & reduce Climate change emissions of Methane/Black Carbon & CO2
Example 2: Solar PV lights to replace kerosene in poor homes (India's TERI initiative)

- Renewable energy
- Inexpensive (lanterns are recharged for small fee at local stations)
- Support education and micro-business development
- Help avert injuries from fuel spills/poor night lighting
- Reduce risks of respiratory conditions & possibly TB caused by indoor air pollution from kerosene fumes
But are low-cost, high-gain mitigation strategies a priority? Not really....

NOT a focus of IPCC analysis, NOT Climate Finance, NOT Energy sector investment; NOT Health priority
Example 3: Transport – Health & Equity

- Investment in public transport, walking/cycling & "walkable cities" promotes physical activity, prevents CVD and traffic injury and safer, more equitable access for women, children, elderly & the poor

- WHY THEN is the development/transport sector still investing mainly in roads, vehicles and biofuels?
## Review of Evidence: More urban investment transport for BRT/Walking/cycling = more health

<table>
<thead>
<tr>
<th>Infrastructure for different travel modes (including presence and proximity of infrastructure)</th>
<th>Increased walking, cycling or active transport</th>
<th>Less active transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>More infrastructure facilitating walking (including general assessments of “walkability” of neighbourhoods as well as presence of specific features, e.g. pavements)</td>
<td>Increased walking, cycling or active transport</td>
<td>Less active transport</td>
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<tr>
<td></td>
<td>Increased physical activity</td>
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<td></td>
<td>Reduced BMI or obesity</td>
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<td>Reduced air pollution-related effects</td>
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<td></td>
<td>Improved reported health status</td>
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<tr>
<td></td>
<td>Reductions in specific health problems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower mortality / higher life expectancy</td>
<td></td>
</tr>
<tr>
<td>More infrastructure facilitating cycling</td>
<td>Increased walking, cycling or active transport</td>
<td>Less active transport</td>
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<tr>
<td></td>
<td>Increased physical activity</td>
<td></td>
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<tr>
<td>More infrastructure facilitating public transport use</td>
<td>Increased walking, cycling or active transport</td>
<td>Less active transport</td>
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<td></td>
<td>Reduced air pollution-related effects</td>
<td></td>
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<tr>
<td>Less infrastructure facilitating car travel (including parking, motorways)</td>
<td>Increased walking, cycling or active transport</td>
<td>Reduced BMI or obesity</td>
</tr>
<tr>
<td></td>
<td>Reduced BMI or obesity</td>
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</tr>
</tbody>
</table>

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**WHO/Health in Green Economy (forthcoming)**
Example 4: Greening Health Care can Improve Health Access

• **170,000 clinics** worldwide have no reliable electricity. Renewable/solar electricity for basic lighting, refrigeration, and medical equipment can improve access to services for poor.

• **Climate-friendly hospitals** can produce their own energy (e.g. CHP; renewables) and be more resilient in emergencies and blackouts which frequently affect low income cities.

• **Transport** – public transport, walking and cycling networks to health care facilities means better worker and patient access.
III. Housing & Urban development – Optimizing Health/Equity opportunities

Photovoltaic street lights in a new neighborhood near Beijing
Housing sector: "Largest immediate" potential for Carbon savings mitigation (IPCC)

- But …. Housing needs of rapidly growing low-income cities largely ignored in mitigation analysis & climate policies

- So are opportunities for actions in slums – whose development contributes to heat island impacts; health impacts; spiraling inequities

_Cape Town, South Africa's Kuyasa neighborhood slum upgrade: First to be financed by CDM_
Climate Change Mitigation for Housing is not Exotic - It is basic Public Health

« Improved insulation saved 0.26 months of life per person » (UK Warm Front Programme)

« Reduced wheezing, days-off school, doctors' visits were reported by occupants of insulated homes » (NZ Insulation study)

Reduction of respiratory illness by 9% to 20% and increase of individual productivity between 0.48% and 11% with natural ventilation strategies
Better home siting/urban planning

• Reduces deaths and injuries from floods, mudslides & urban heat island effects due to urban sprawl;
• Improves access to safe, affordable drinking-water, sewage and energy services
• 'Compact, walkable' neighborhoods improve child mobility, opportunities for physical activity; public transport access & social cohesion
Natural ventilation protects from:

- TB/airborne infections
- Asthmas (mould);
- Radon;
- Chemicals
- Heat Stroke

AND

- Reduces GHGs from Air Conditioning
- AC-related health inequities, e.g. noise and urban heat island impacts

<table>
<thead>
<tr>
<th>Air Changes/Hour ACH)</th>
<th>1 ACH</th>
<th>6 ACH</th>
<th>18 ACH</th>
<th>30 ACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection droplets (quanta)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>7</td>
<td>30%</td>
<td>6%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>14</td>
<td>51%</td>
<td>11%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>20</td>
<td>64%</td>
<td>16%</td>
<td>6%</td>
<td>4%</td>
</tr>
</tbody>
</table>

*Quanta refers to generation of droplet nuclei
House screening: natural ventilation tool & effective vector control

- Systematic review reveals historic efficacy in of house screening for malaria control – 80% disease risk reduction (Kaiser et al, 2005)

- But screening has been abandoned in the stampede for IRS/bednets

- We need a more integrated approach that supports other healthy housing determinants (natural ventilation) as well as sustainable development.
III. Building a common vision of the future: Goals - Actions
BRIC countries are innovators in "greener" housing, energy

- **Light a billion lives** - India

- **Solar hot water heating** is a fast-growing, popular technology in Turkey, China, South Africa, Middle East, etc.

- **China** is mass marketing next-generation solar PV & passive. Below passive solar "combi" hot water space heating raised night-time winter temperatures from 6-8° C lows in village near Beijing
But these innovations lack global policy support and financing for scale-up

- **Cape Town, South Africa's Kuyasa neighborhood slum upgrade:** First to be financed by UN Clean Development Mechanism (CDM). Solar hot water systems, sewage and insulation (below) will help reduce heat-related, respiratory and waterborne diseases.
- **BUT of 4500 CDM projects only 14 were for housing (2009)**
- **CDM requirements remain** too complex for most low-income communities; don't consider "whole house" approaches; and don't consider health.
UNFCCC is failing Public Health

'Health' is in the preamble of the Rio Declaration – but overlooked in actions

- Health gets 1% of international climate adaptation finance.
- Risks to public health from mitigation are not considered and therefore cannot be managed.
- Health omitted from models for climate decisions - Of the 13 economic models for mitigation, only 1 considers health benefits (The Stern Report).

*Missed opportunities for health equity!*
Health Sector needs to fill the leadership vacuum

- Protect health
- Protect children, vulnerable who do not have a voice

- Use evidence-based knowledge to inform 'other sector' policies
- Ensure better use of resources – invest where the benefits are greater
- Help reduce health inequity through public policies
Our goal: Integrated approach to climate, development & health

- We have proven, cost-effective interventions for prevention
- All are "win-wins": saving lives now, reducing inequities, reducing vulnerability to climate change; and reducing future GHGs.
- Response to climate change is integral to a preventive public health – not a distraction.
- Emerging economies can be leaders in innovation.
- Global community needs to support clean development in developing countries as a win-win approach to controlling GHG emissions.
Green Economic development: net savings for health sector

<table>
<thead>
<tr>
<th>Program</th>
<th>Savings for every dollar spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunizations (reference value)</td>
<td>$27</td>
</tr>
<tr>
<td>Cleaner, improved biomass stoves</td>
<td>$4.2 - $61</td>
</tr>
<tr>
<td>Improved water &amp; sanitation</td>
<td>$3 - $34</td>
</tr>
<tr>
<td>Sustainable/active transport</td>
<td>$3 - 30</td>
</tr>
</tbody>
</table>

Each of these environmental interventions gives ~ 200% or more return on investment
Health Sector support for health & equity in a green economy

1. Ensure that health receives Climate Finance support.
2. Use health impact assessment (HIA) to identify policies with best health performance.
4. Monitoring-reporting-verification (MRV) of health impacts from investments using valid indicators.
5. Support innovation and build capacity in cities and countries.
Climate and green economy: focus for action on social determinants of health!

Thank you!