Financing Sustainable Development: What Needs to Change?

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Interconnectivity & Systemic Risks
In Human and Earth Systems

Humans have globally integrated trade & capital markets over the past few decades....
Interconnectivity & Systemic Risks
In Human and Earth Systems

Humans have globally integrated trade & capital markets over the past few decades....

Ecosystems have been globally integrated by nature since the beginning of time...
Increase in CO₂ Emissions

- Anthropogenic causes – growth of “Brown Economy”

Ocean Acidification

- Increasing concentrations of CO₂ lowers the pH of seawater (ocean acidification)

Bleaching of Coral Reefs

- Decrease in concentration of carbonate ions reduces capacity of corals etc to make calcium carbonate skeletons.

Drastic decline in fish population

- 25 percent of all marine species live off coral reefs

Coastal communities suffer

- Destruction of fish habitat causing decline in fish population

Source: Eakin, 2008; Buddemeier, 2004
Interconnectivity & Systemic Risks
Planetary Boundaries

‘Planetary boundaries’ interconnections (e.g.: climate & ocean acidification; climate & land-system change; etc) also have development and budgetary impacts...

Source: www.stockholmrresilience.org

P – Phosphorous
N – Nitrogen
E/MSY – extinctions per million species-years
BII – Biodiversity Intactness Index
Budgetary Impacts of Climate Change

Climate change erodes the wealth of a nation in two ways:

- Reduces Public Income
- Increases Public Expenditure
Budgetary Impacts of Climate Change

Climate change erodes the wealth of a nation in two ways:

- (Stern Review, 2006) risks 5%-20% decline in GDP
- Reduced livelihoods, manpower, productive man hours
- Crop losses & Reduced Agri-productivity

- Outlays to fix Damage Caused by Natural Disasters
- Compensation Payments & Medical Costs
- Costs of building defences: dykes, storm protection, storm shelters
Increasing Cost of Damage Caused by Natural Disasters

Estimated damage (USD billion) caused by reported natural disasters 1975 - 2011

Uncertain Outlook for Tax Base
Widening Post-Crisis Jobs Gap; Slower Wages Growth

“The global economy has failed to recover the output levels of pre-crisis trends and employment creation is still not sufficient to close the jobs gap that opened up with the crisis” (ILO,2015)

Global Job Gap, 2014-2019

Global Unemployment, 2014-2019

Panel A. Global unemployment developments

Wage and productivity growth
(107 countries, annual average in %)

<table>
<thead>
<tr>
<th>Year</th>
<th>Wage growth</th>
<th>Productivity growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-08</td>
<td>2.3</td>
<td>2.5</td>
</tr>
<tr>
<td>2008-09</td>
<td>1.9</td>
<td>-0.6</td>
</tr>
<tr>
<td>2009-13</td>
<td>2.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Source: ILO, 2015

Note: The figure shows the evolution of global employment and its current forecasts until 2019 (solid and orange line) in comparison with employment growth as expected prior to the crisis in 2008 (green dashed line).
Of 33 countries analysed by KPMG (2012-13) only 9 increased corporate tax rates, compared to 24 who decreased corporate tax rates.

(KPMG, 2014)

1950 to 1986, federal taxes on corporate profits ranged from 46% to 53% of receipts, compared to just 9.9% in 2011.

Source: Klinger, 2014
New Avenues For Climate Finance And Changes That Will Enable Sustainable Development

- Changes in Taxation
- Changes in Subsidies
- Change Perspective on Climate Finance in Budgets
- Change Private and Public Investment Norms
- Use Green Economy Indicators to Measure & Manage Sustainable Development Goals (SDG) Progress
- Change Corporate Reporting and Accounting Practices
Changes In Taxation

“Taxing the bads, not the goods”
- More tax on resource extraction & use; pollution; etc., & Less tax on profits and incomes
- Reduction / removal of tax breaks for “brown economy” industry

Differential Taxes for Different “Public Wealth Impacts”
- Tax breaks for companies creating positive externalities
- Higher taxes for companies creating negative externalities

Source: Sukhdev, 2012
4% tax on the value of minerals used in our daily lives (32 minerals included) would amount to $104 billion—which can then be used to tackle climate change and fulfil SDG’s.
Changes In Taxation

Differential Taxes for Companies with Different “Public Wealth Impacts”

<table>
<thead>
<tr>
<th>Total Value of Human-Capital Externality (HCE) Generated by Employees at INFOSYS, Mysore Campus.....</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Employees</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>149,994</td>
</tr>
<tr>
<td>Value of Human Capital Externality (in million USD)</td>
</tr>
<tr>
<td>1,408</td>
</tr>
</tbody>
</table>

Source: Additional Information Infosys Annual Report, 2010-11

The human capital externality generated by Infosys which is probably one of the largest generators of human-capital externalities in the world was worth over $1.4 billion in 2012.

Lower Taxes For Companies Creating Positive Externalities
Changes in Subsidies

“Targeting Subsidies at Tomorrow’s Problems, not Yesterday’s”

- Reduction & gradual removal of subsidies for fossil fuels
- Indonesia example

Source: Sukhdev, 2012
## Change from “Silo” to “Systemic” View of Climate Budgets

Example: Climate Public Expenditure and Institutional Reviews (CPEIR) helps nations to...

- Integrate climate change programming into “routine” planning and budgeting processes.
- Reinforce existing national climate change policy development and implementation.
- Appreciate the role of sub-national actors and mechanisms in climate change finance governance.
- Bolster country and institutional ownership over climate change related finance by national authorities.
- Serve as a tool to track the achievement of mitigation targets as well as adaptation responses.

Source: CFADE and UNDP, 2015
Utilize Domestic Funds for Climate Finance

“The National Clean Energy Fund” - Cess on coal

Purpose - The NCEF is created for funding research and innovative projects in clean energy technologies.

Revenues collected under NCEF
FY 2010–2011: Rs 1,066 crore
FY 2011–2012: Rs. 3,249.40 crore*
FY 2012–2013: Rs. 3,864.20 crore*

* Estimates
Source: Pandey, 2013
Changes in Private Investments

Encourage Private Sector to move away from “brown economy” and invest instead in “green economy”.....

Encourage/ Institutionalize “Principles of Responsible Investment”- menu of actions for incorporating ESG issues into investment practices across asset classes” Total of 1,380 signatories already (unpri.org, 2015).

Divest State funds from “Stranded Assets.” Assets stranded by climate change regulations, stranded by economics, and by energy innovation (HSBC, 2015).

<table>
<thead>
<tr>
<th>Investor</th>
<th>Country</th>
<th>Category</th>
<th>Strategy</th>
<th>Divestment</th>
<th>Date of announcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second AP Fund</td>
<td>Sweden</td>
<td>Pension</td>
<td>Partial</td>
<td>12 coal and 3 oil-gas companies</td>
<td>Oct-14</td>
</tr>
<tr>
<td>ANU</td>
<td>Australia</td>
<td>College</td>
<td>Partial</td>
<td>Iuka Resources, Indigendness Group, Newcore, sandiles, Gtm, Search, Sand and Simas, representing 3.1% of holdings</td>
<td>Oct-14</td>
</tr>
<tr>
<td>Rockefeller Brothers Fund</td>
<td>US</td>
<td>Family</td>
<td>Partial</td>
<td>Only coal and oil sands. Ultimately, all fossil fuels</td>
<td>Sep-14</td>
</tr>
<tr>
<td>Svedranic</td>
<td>Norway</td>
<td>Pension</td>
<td>Partial</td>
<td>13 coal mines and six mines that are heavily exposed to oil sands later</td>
<td>Jan-14</td>
</tr>
<tr>
<td>Bonus</td>
<td>Norway</td>
<td>Local authority</td>
<td>Partial</td>
<td>Decision to divest from coal-burning utilities</td>
<td></td>
</tr>
<tr>
<td>Oxford</td>
<td>Norway</td>
<td>Local</td>
<td>Partial</td>
<td>20 fossil fuel companies that hold the largest coal, oil, and gas reserves</td>
<td>Oct-13</td>
</tr>
<tr>
<td>Church of Sweden</td>
<td>Sweden</td>
<td>Religious</td>
<td>Partial</td>
<td>All fossil fuels</td>
<td></td>
</tr>
<tr>
<td>The University of Glasgow</td>
<td>UK</td>
<td>College</td>
<td>Partial</td>
<td>Divested £1.6m from the fossil fuel industry and trace new investments</td>
<td>Oct-14</td>
</tr>
<tr>
<td>Green Mountain College</td>
<td>US</td>
<td>College</td>
<td>Partial</td>
<td>40 fossil fuel companies that hold the largest coal, oil, and gas reserves</td>
<td>May-13</td>
</tr>
<tr>
<td>Hampshire College</td>
<td>US</td>
<td>College</td>
<td>Partial</td>
<td>All fossil fuels</td>
<td></td>
</tr>
<tr>
<td>Ford College</td>
<td>US</td>
<td>College</td>
<td>Partial</td>
<td>200 fossil fuel companies that hold the largest coal, oil, and gas reserves</td>
<td></td>
</tr>
<tr>
<td>Prescot College</td>
<td>US</td>
<td>College</td>
<td>Partial</td>
<td>200 large fossil fuel corporations over the next 3 years</td>
<td>Feb-14</td>
</tr>
<tr>
<td>San Francisco State Univ</td>
<td>US</td>
<td>College</td>
<td>Partial</td>
<td>Could not be scams companies, began process to exit fully divesting from the fossil fuel industry</td>
<td></td>
</tr>
<tr>
<td>Stanford College</td>
<td>US</td>
<td>College</td>
<td>Partial</td>
<td>200 fossil fuel companies that hold the largest coal, oil, and gas reserves</td>
<td>Feb-13</td>
</tr>
<tr>
<td>World Council of Churches</td>
<td>Switzerland</td>
<td>Religious</td>
<td>Partial</td>
<td>Coal mining companies</td>
<td>May-11</td>
</tr>
<tr>
<td>The University of Sydney</td>
<td>Australia</td>
<td>College</td>
<td>Partial</td>
<td>Coal mining companies by reducing the carbon footprint of its portfolio by 20% over three years</td>
<td></td>
</tr>
<tr>
<td>Oslo</td>
<td>Norway</td>
<td>Local authority</td>
<td>Partial</td>
<td>Coal companies</td>
<td>Mar-16</td>
</tr>
<tr>
<td>Nordea</td>
<td>Sweden</td>
<td>Asset</td>
<td>Partial</td>
<td>Up to 4 coal mining companies</td>
<td>Jan-15</td>
</tr>
<tr>
<td>KRI Pension Fund</td>
<td>Norway</td>
<td>Pension</td>
<td>Partial</td>
<td>Companies that derive more than 50 percent of their revenues from coal</td>
<td>Nov-16</td>
</tr>
<tr>
<td>Local Government Super</td>
<td>Australia</td>
<td>Pension</td>
<td>Partial</td>
<td>Companies that make more than a third of their revenues from coal mining or coal-free electricity generation</td>
<td></td>
</tr>
<tr>
<td>Norge Bank IM</td>
<td>Norway</td>
<td>Sovereign Wealth Fund</td>
<td>Partial</td>
<td>22 carbon-intensive fossil fuel companies</td>
<td>Oct-14</td>
</tr>
<tr>
<td>The Guardian Media Group</td>
<td>UK</td>
<td>Media</td>
<td>Partial</td>
<td>All fossil fuels. Pledge to remove coal released in new environment/climate companies</td>
<td>Apr-15</td>
</tr>
</tbody>
</table>

Source: Paun, 2015
Change in Public Investments

Governments to incorporate ecosystem service values & “natural capital” into policy making, to enable a more sustainable long term development.

**EXAMPLE:** Forest Ecosystems of some Indonesian provinces were valued. This **FEVS** shows, for example, in Central Sulawesi,
- One hectare of forest prevents soil erosion equivalent to **6,538 kg/ha/year.**
- This translates to an avoided costs of approximately **USD 81 million** for the year 2012.

Importance of investments in forest protection emphasized, as failing to do so will diminish soil quality, considerably reduce agricultural yields, cause increased fertilizer costs (UNORCID, 2015).

**EXAMPLE:** “Green Economy” and “Business as Usual” scenarios were simulated under the Forest Ecosystem Valuation Study. Under GE scenario avoided deforestation of approx. **110,000 Km²** until 2030 was simulated, which requires annual investment of **USD 600 million** between 2015 and 2030.

The following table provides the benefit of this investment:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Unit</th>
<th>BAU</th>
<th>GE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Forest Cover 2030</td>
<td>000 Km²</td>
<td>750</td>
<td>861</td>
</tr>
<tr>
<td>Cumulative annual CO2 emission (2015-2030)</td>
<td>Million tCO2</td>
<td>2,484</td>
<td>689</td>
</tr>
<tr>
<td>Total employment in forestry sector in 2030</td>
<td>People</td>
<td>193,774</td>
<td>247,945</td>
</tr>
<tr>
<td>Timbre production in 2030</td>
<td>Thousand m3</td>
<td>47,788</td>
<td>64,068</td>
</tr>
<tr>
<td>Timber value added</td>
<td>IDR billion/year</td>
<td>117,694</td>
<td>342,313</td>
</tr>
</tbody>
</table>

Source: UNORCID, 2015
Use Green Economy Indicators to Measure & Manage (SDG) Progress

GDP of the Poor
- Measures the value of household incomes of rural and forest dependent communities including economically invisible - but critical and valuable - ecosystem services.

Green GDP
- Captures and estimates the invisible economic benefits from ecosystem services, and also accounts for depreciation of natural capital (i.e. degradation and depletion of ecosystems and their services over time). Green GDP strictly also includes accounting for changes in the value of Human Capital (education, skills, health).

Decent Green Jobs
- Measures direct employment created in different sectors of the economy and through related activities that reduces the environmental impact of those sectors and activities, and brings them down to sustainable levels. Jobs also have to meet the “decency” criteria where they empower employees (ILO)

Source: Sukhdev, 2014
Green Economy Indicators
EXAMPLE: “GDP of the Poor” - Natures contribution

<table>
<thead>
<tr>
<th>Type of Village</th>
<th>Total average ecosystem based Non Cash Income (% of total income)</th>
<th>Total average ecosystem based Cash and Non Cash Income (% of total income)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest N=31 households (Murung Raya District)</td>
<td>51.43</td>
<td>77.41</td>
</tr>
<tr>
<td>Riverside N=44 households (North Barito, South Barito, Pulang Pisau and Kapuas Districts)</td>
<td>43.55</td>
<td>86.38</td>
</tr>
<tr>
<td>Rural mixed with rattan N=27 households (Katingan District)</td>
<td>44.63</td>
<td>74.99</td>
</tr>
<tr>
<td>Rural mixed with coal N=22 households (North Barito and South Barito)</td>
<td>21.79</td>
<td>34.14</td>
</tr>
<tr>
<td>All type N=119 households</td>
<td>43.63</td>
<td>76.38</td>
</tr>
</tbody>
</table>

Source: Sukhdev, 2014
Change Corporate Reporting and Accounting Practices

Corporates to be encouraged fish to disclose not just Financial performance but also Social, Human and Environmental Externalities.

AkzoNobel: Measuring Impact in 4D

Change Reporting and Accounting Practices

Governments need to widen their reporting preview beyond that of the System of National Accounting.

According to EPA, “Green accounting” (also known as environmental accounting) seeks to better measure sustainability by expanding gross measures of national welfare to include non-market values, in particular ones associated with environmental goods and services (EPA, 2015).
Change National Accounting & Reporting

Accounting Tiers

- Inclusive Wealth
  - Financial, Environmental, Human and Social Impacts
- Green GDP
  - Financial and Environmental Impacts
- SNA
  - Financial Impacts

Alternative Accounting Frameworks

- SEEA – System of Environmental and Economic Accounting
- WAVES - Wealth Accounting and Valuation of Ecosystem Services
- Inclusive Wealth Accounting
Change National Accounting & Reporting

EXAMPLE: “Green Accounting for Indian States Project”

- GAISP measured sustainable development at the state level in India
- This set of 6 monographs helps account for externalities such as
  - non-marketed services of forests (carbon storage, biodiversity values, ecological services, etc.)
  - the hidden costs of agriculture,
  - losses in freshwater quality and
  - depletion of sub-soil assets &
  - Records vast unrecorded gains in human capital.

Source: http://gistindia.org/monograph.html
Thank You!

www.gistadvisory.com

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UNEP Goodwill Ambassador
References

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- Klinger, S., Murray, L. R., McFate, K., & Goehl, G. (2014). *The Disappearing Corporate Tax Base: How to Reclaim Lost Tax Revenue to Rebuild State Budgets*. The Center for Effective Government; National People’s Action.