Financing Sustainable Development: What Needs to Change?

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Interconnectivity & Systemic Risks
In Human and Earth Systems


The Jakarta Post

TWENTY-EIGHT PAGES

China dragging down RI's growth

Jakarta Post,
31st August 2015
Front Page..

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

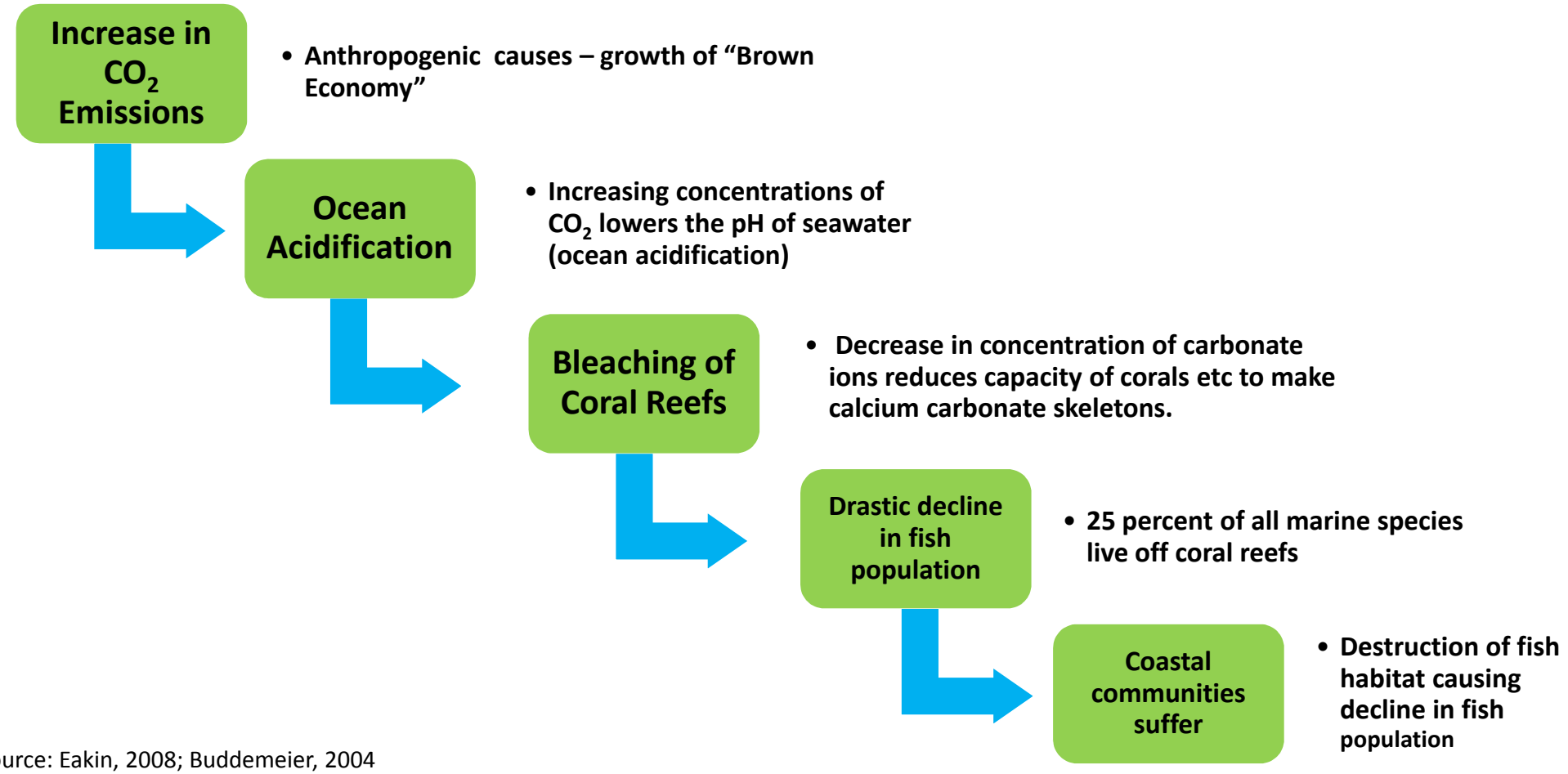
Interconnectivity & Systemic Risks

In Human and Earth Systems

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

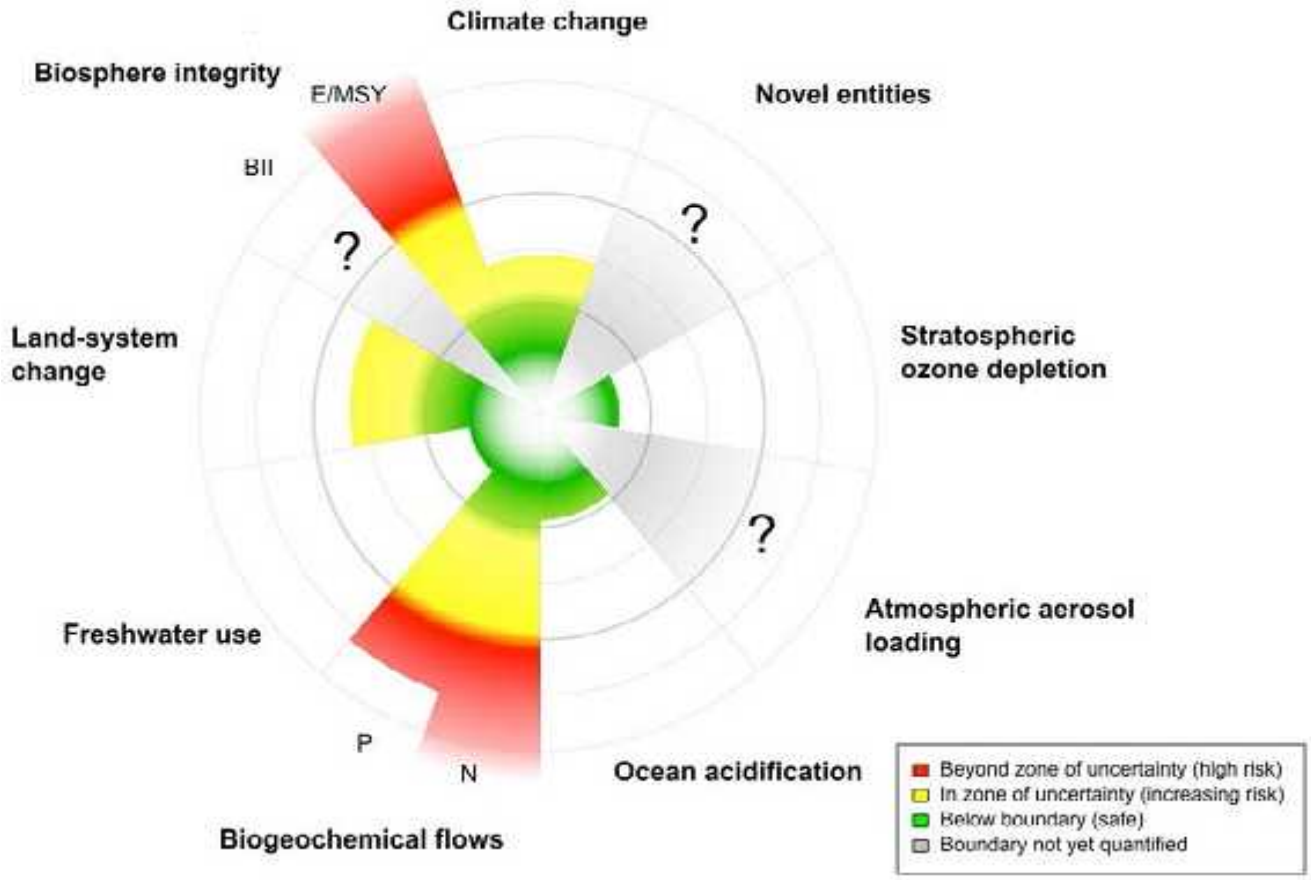
Ecosystems have been globally integrated by nature since the beginning of time…

Interconnectivity & Systemic Risks
An Example



Source: Eakin, 2008; Buddemeier, 2004

Interconnectivity & Systemic Risks
Planetary Boundaries



Source: www.stockholmresilience.org

'Planetary boundaries' interconnections (eg: climate & ocean acidification; climate & land-system change; etc) also have ***development*** and ***budgetary*** impacts ....

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

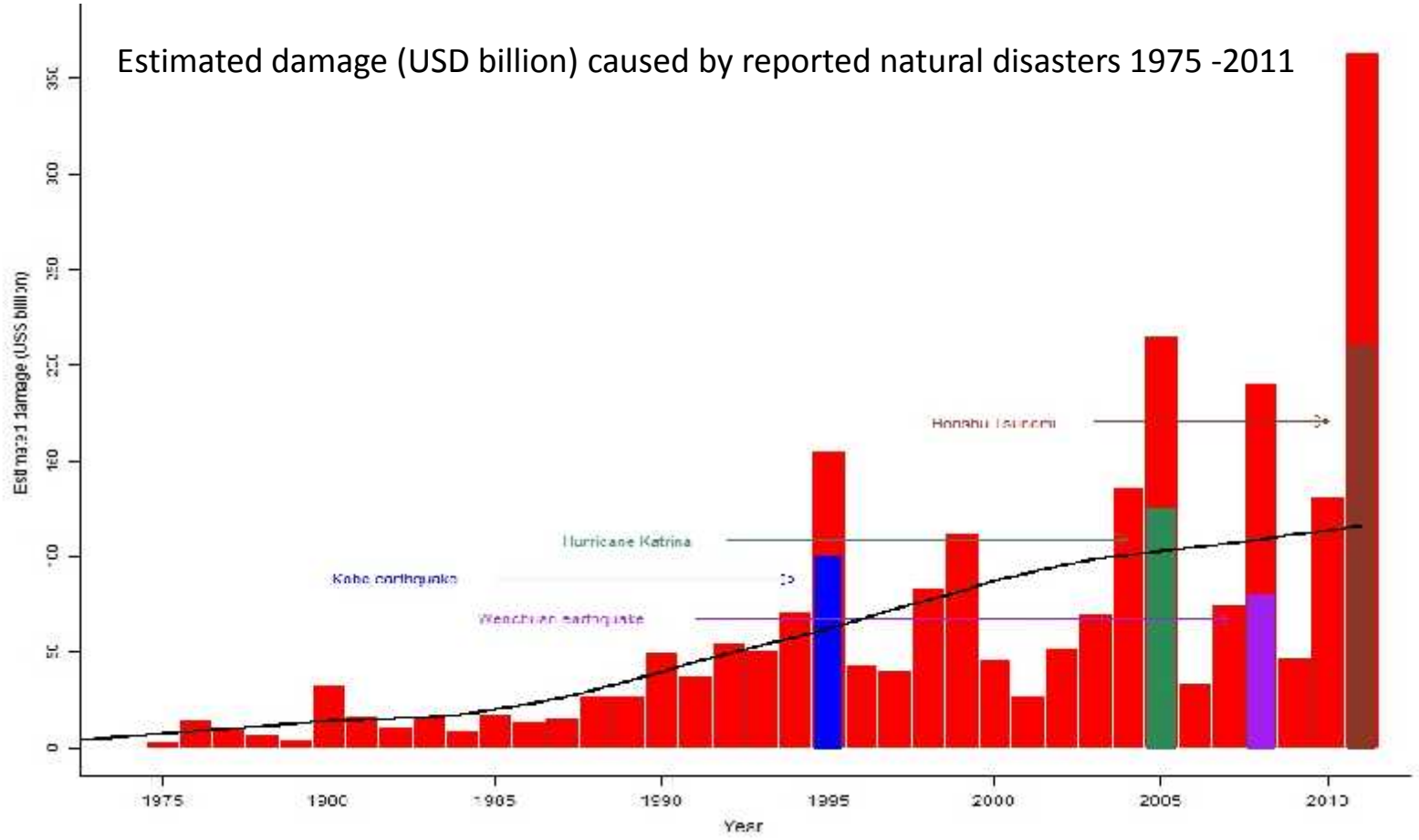
Budgetary Impacts of Climate Change

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



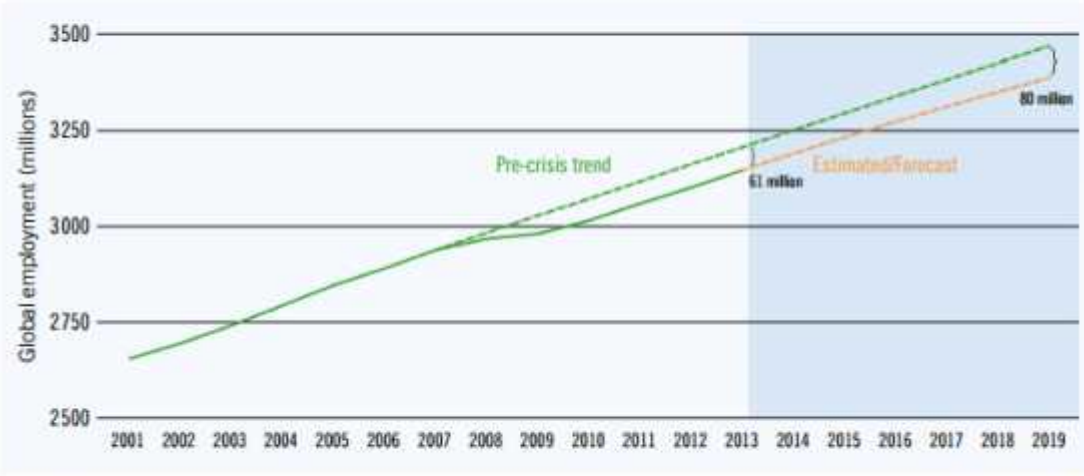
Source: EM-DAT: The CRED/OFDA International Disaster Database – www.emdat.be – Université Catholique de Louvain – Brussels – Belgium.

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)

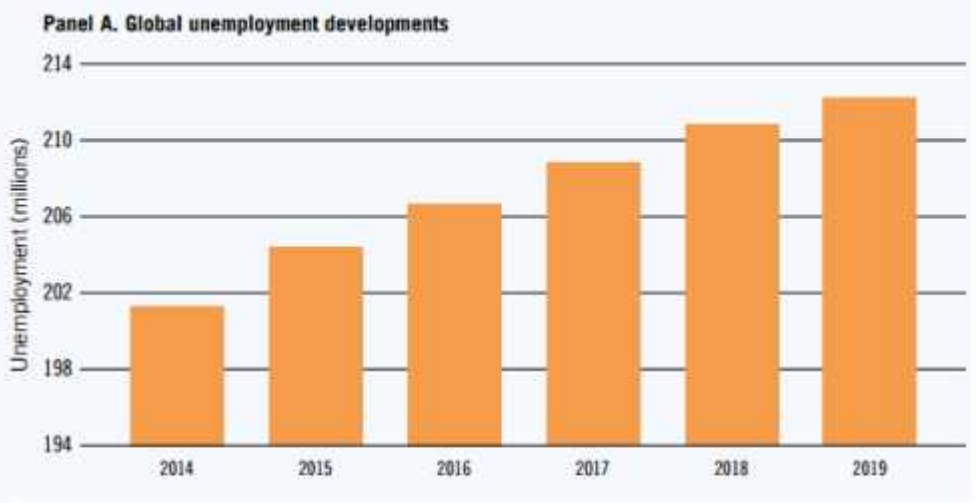
Global Job Gap, 2014-2019



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).

Source: ILO, *Trends Econometric Models*, October 2014.

Global Unemployment, 2014-2019



Source: ILO, 2015

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

	2000–08	2008–09	2009–13
Wage growth	2.3	1.9	2.0
Productivity growth	2.5	–0.6	2.6

Source: ILO, 2015

Uncertain Outlook for Tax Base

Falling Corporate Tax ; Slower Wage Growth

U.S Corporate taxes as a percentage of federal budget

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

Of 33 countries analysed by KPMG (2012- 13)only 9 increased corporate tax rates, compared to 24 who decreased corporate tax rates.

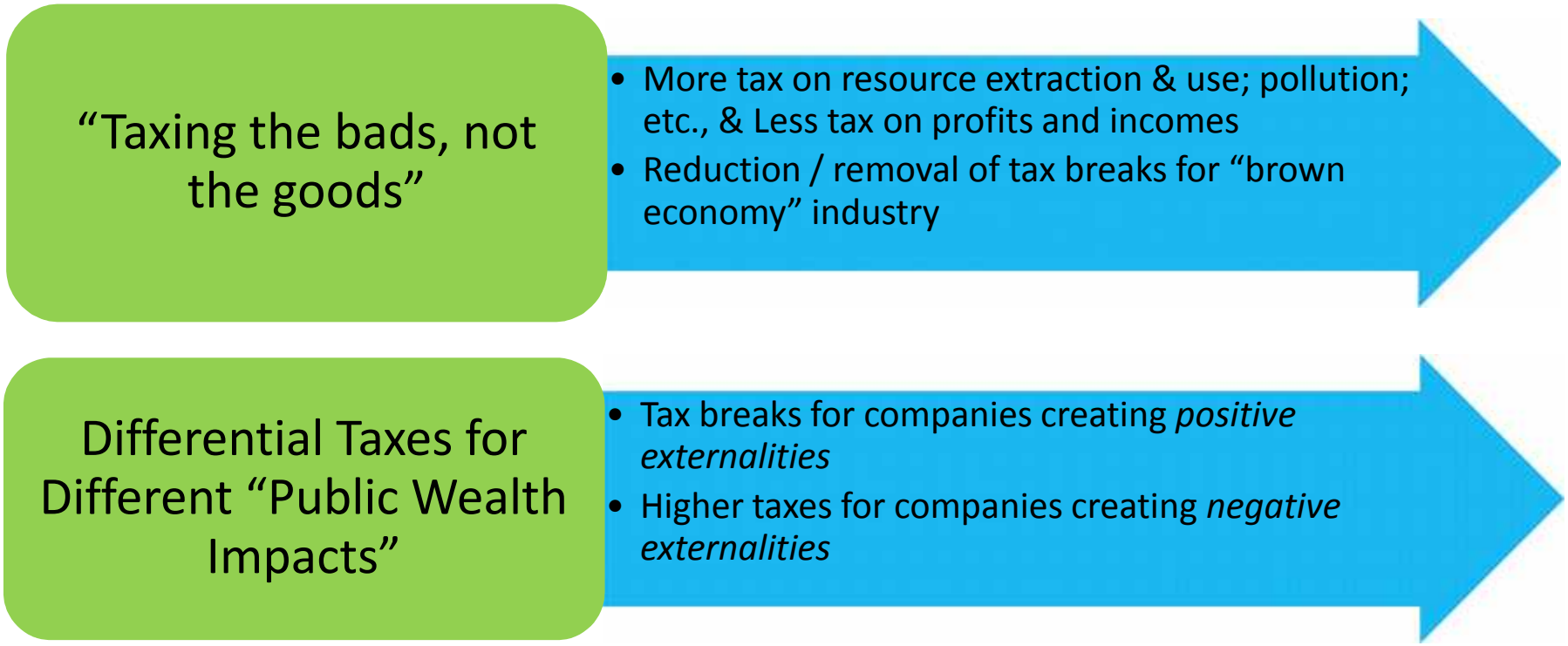
(KPMG, 2014)

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



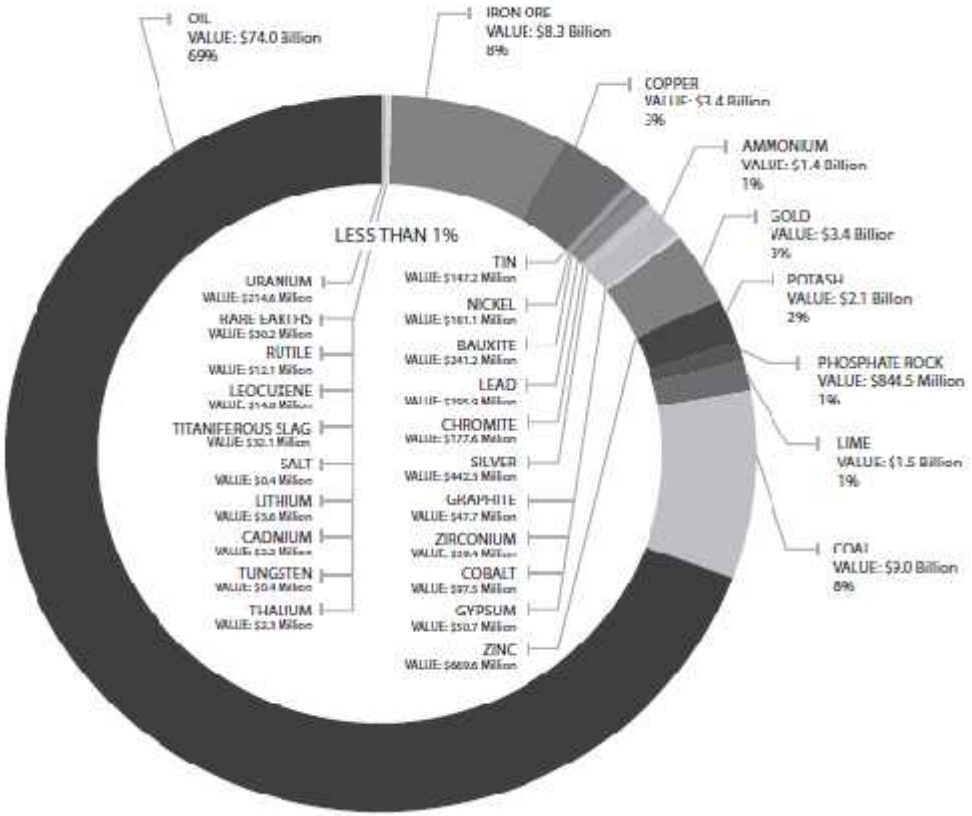
Source: Sukhdev, 2012

Changes In Taxation

Taxing Resource Extraction

"Taxing the bads, not the goods"

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.



Source: Sukhdev, 2012

Changes In Taxation

Differential Taxes for Companies with Different "Public Wealth Impacts"

Source: Sukhdev, 2012

Total Value of Human-Capital Externality (HCE) Generated by Employees at INFOSYS, Mysore Campus…..

	2012	2011	Annual Change
Number of Employees	149,994	130,820	14.66%
Value of Human Capital Externality (in million USD)	1,408	1,151	22.36%

Source: Additional Information Infosys Annual Report, 2010-11
http://gistadvisory.com/index.php?a=ourservices&b=corporations&c=human_capital&d=hcx_lite

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).

Investor	Country	Category	Strategy	Divestment	Date of announcement
Second AP Fund	Sweden	Pension	Partial divestment	12 coal and 8 oil-and-gas companies	Oct-14
ANU	Australia	College	Partial divestment	Iluka Resources, Independence Group, Newcrest, Sandfire, Oil Search, Santos and Sirius, representing 5.1% of holdings	Oct-14
Rockefeller Brothers Fund	US	Family fund	Fossil fuels	Initially, coal and tar sands. Ultimately, all fossil fuels	Sep-14
Skorebranc	Norway	Pension	Partial divestment	13 coal extractors and six firms that are heavily exposed to oil sands later decision to divest from coal-heavy utilities.	Jan-14
Boxtel	Netherlands	Local authority	Partial divestment	200 fossil fuel companies that hold the largest coal, oil, and gas reserves.	Oct-13
Oslo	Norway	Local authority	Fossil fuels	All fossil fuels	Jun-13
Church of Sweden	Sweden	Religious	Fossil fuels	All fossil fuels	Sep-14
The University of Glasgow	UK	College	Partial divestment	Divested £18m from the fossil fuel industry and froze new investments	Oct-14
Green Mountain College	US	College	Partial divestment	200 fossil fuel companies that hold the largest coal, oil, and gas reserves.	May-13
Hampshire College	US	College	Fossil fuels	All fossil fuels	Dec-11
Pepate Colleges	US	College	Partial divestment	200 fossil fuel companies that hold the largest coal, oil, and gas reserves.	Dec-13
Prescott College	US	College	Partial divestment	200 largest fossil fuel corporations over the next 3 years	Feb-14
San Francisco State Univ	US	College	Partial divestment	Coal and tar sands companies, began process to look at fully divesting from the fossil fuel industry	May-13
Sterling College	US	College	Partial divestment	200 fossil fuel companies that hold the largest coal, oil, and gas reserves.	Feb-13
Stanford	US	College	Coal	Coal mining companies	May-14
World Council of Churches	Switzerland	Religious	Fossil fuels	All fossil fuels	Jul-14
The University of Sydney	Australia	College	Carbon	Cut its fossil fuel investments by reducing the carbon footprint of its portfolio by 20% over three years	Feb-15
Oslo	Norway	Local authority	Coal	Coal companies	Mar-15
Nordea	Sweden	Asset Manager	Coal	Up to 40 coal-mining companies	Jan-15
KPL Pension Fund	Norway	Pension	Coal	Companies that derive more than 50 per cent of their revenues from coal	Nov-15
Local Government Super	Australia	Pension	Coal	Companies that make more than a third of their revenues from coal mining or coal-fired electricity generation	Oct-14
Norges Bank IM	Norway	Sovereign Wealth Fund	ESG	22 carbon-intensive fossil fuel companies	Feb-15
The Guardian Media Group	UK	Media	Fossil fuels	All fossil fuels. Pledge to reinvest cash released in pro-environment/climate companies.	Apr-15

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 Km^2** 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

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

Source: UNORCID, 2015

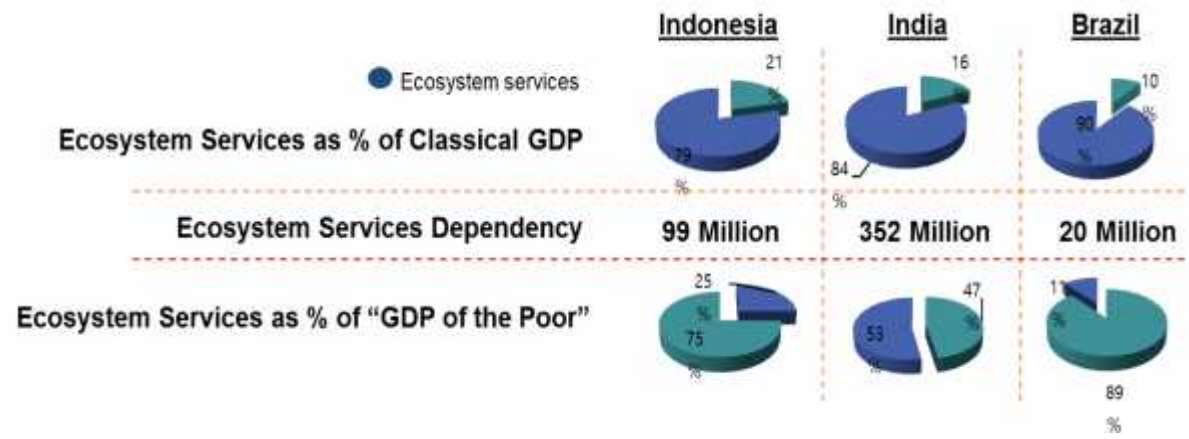
Use Green Economy Indicators to Measure & Manage (SDG) Progress

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



Source: TEEB for National and International Policy,

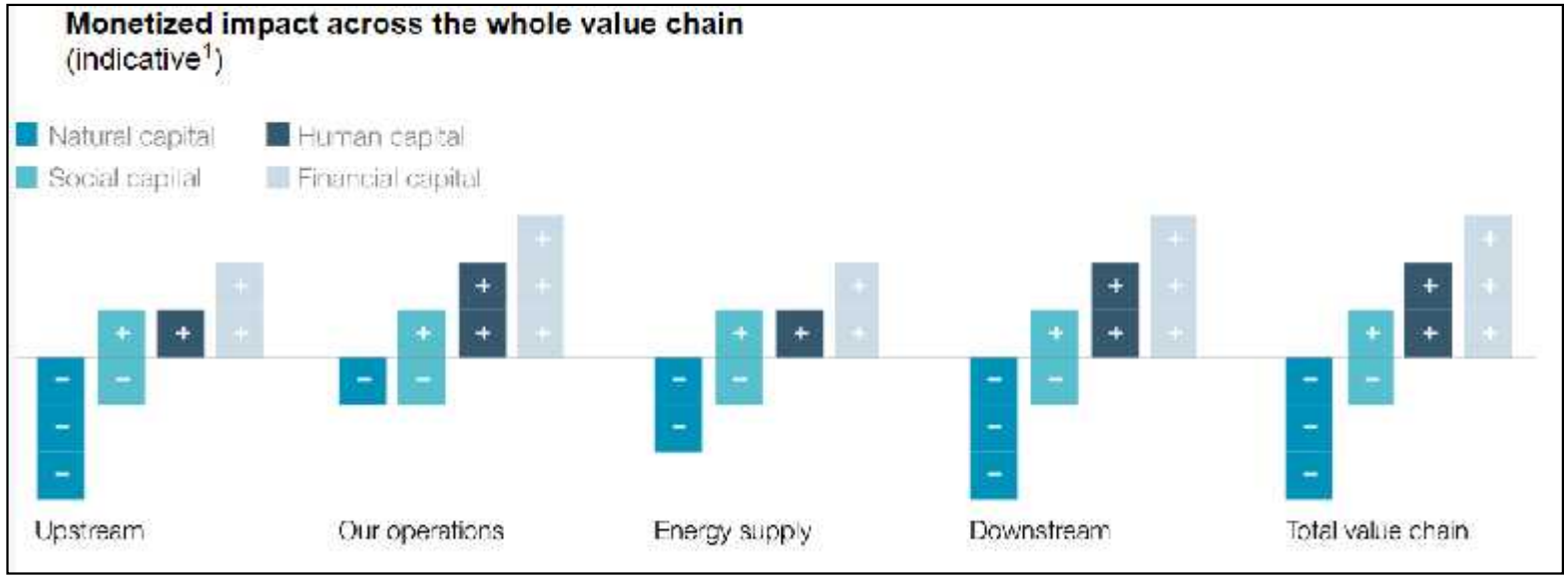
Ecosystem Services Dependence in Central Kalimantan		
Type of Village	**Total average ecosystem based Non Cash Income (% of total income)**	**Total average ecosystem based Cash and Non Cash Income (% of total income)**
Forest N=31 households (Murung Raya District)	51.43	77.41
Riverside N=44 households (North Barito, South Barito, Pulang Pisau and Kapuas Districts)	43.55	86.38
Rural mixed with rattan N=27 households (Katingan District)	44.63	74.99
Rural mixed with coal N=22 households (North Barito and South Barito)	21.79	34.14
All type N=119 households	**43.63**	**76.38**

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.

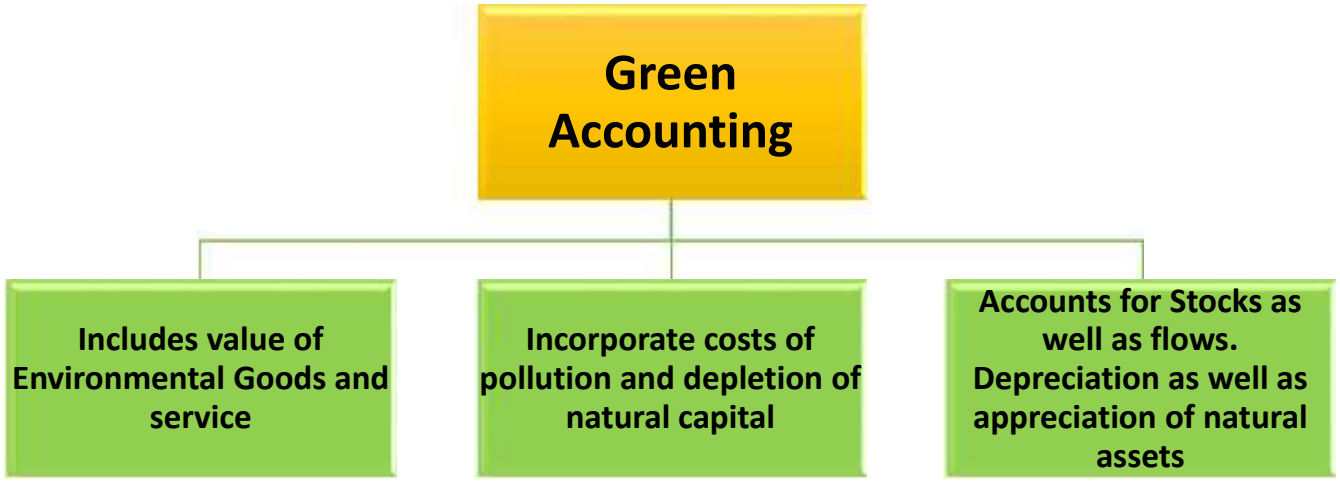
AkzoNobel: Measuring Impact in 4D



Source: http://report.akzonobel.com/2014/ar/case-studies/sustainable-business/measuring-our-impact-in-4d.html

Change Reporting and Accounting Practices

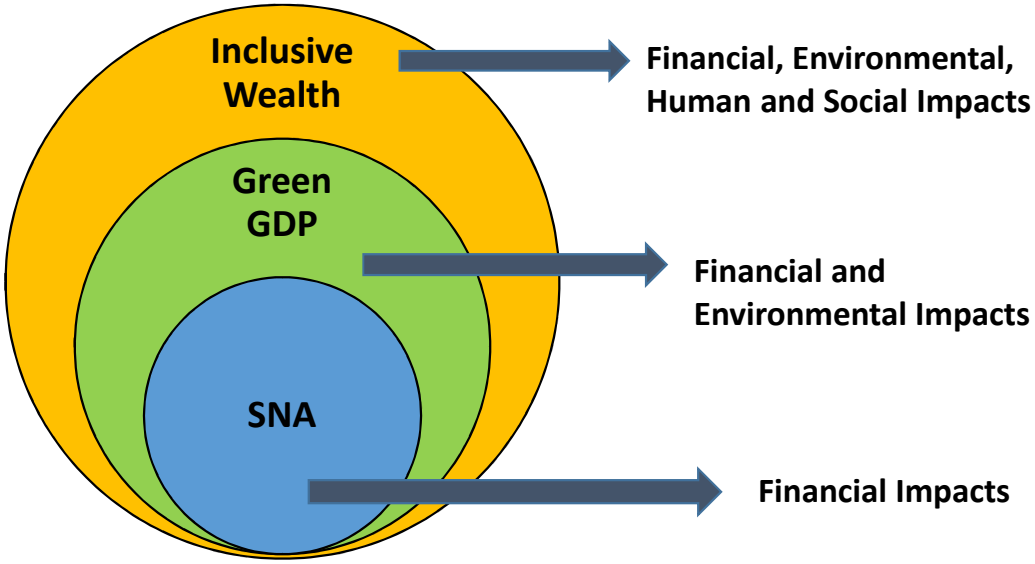
Governments need to widen their reporting preview beyond that of the System of National Accounting.



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



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

The value of timber, carbon, fuelwood, and non-timber forest produce

The value of agricultural cropland and pastureland

The value of educational capital formation in India

The value of biodiversity in India's forests

Accounting for the ecological services such as soil conservation, water augmentation and flood prevention

The value of freshwater resources in India

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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