Crecimiento Verde y el Capital Natural

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I have three messages for you today:

1. **We can define and measure green growth:**
   - **Economic growth that simultaneously reduces environmental costs (externalities) is green.**
   - **Economic growth that does not, is not.**

2. Green growth is an annual flow concept, different from valuing the total stock of natural capital.

3. Green growth also means saving for the future

Traditional GDP does not measure…

Wear and tear and depreciation resulting from using produced assets like factories, roads, and bridges.

Loss of natural areas that provide ecosystem services to the economy, like pollination.

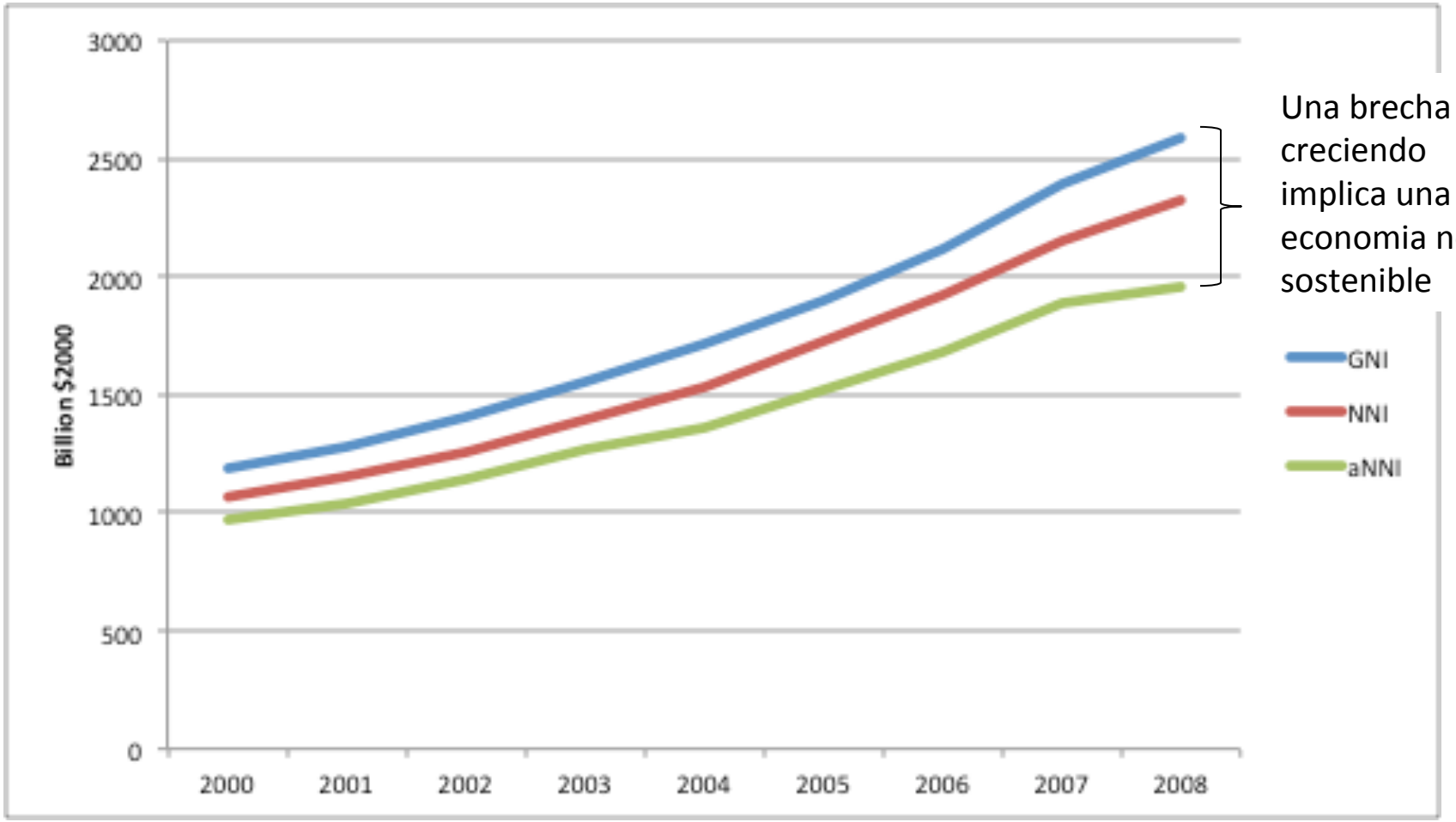
Extent to which renewable resources like forests and fisheries are being depleted.

Depletion of minerals and mineral fuels.

Future losses resulting from greenhouse gas emissions – sea level rise, extreme weather, and agricultural losses.

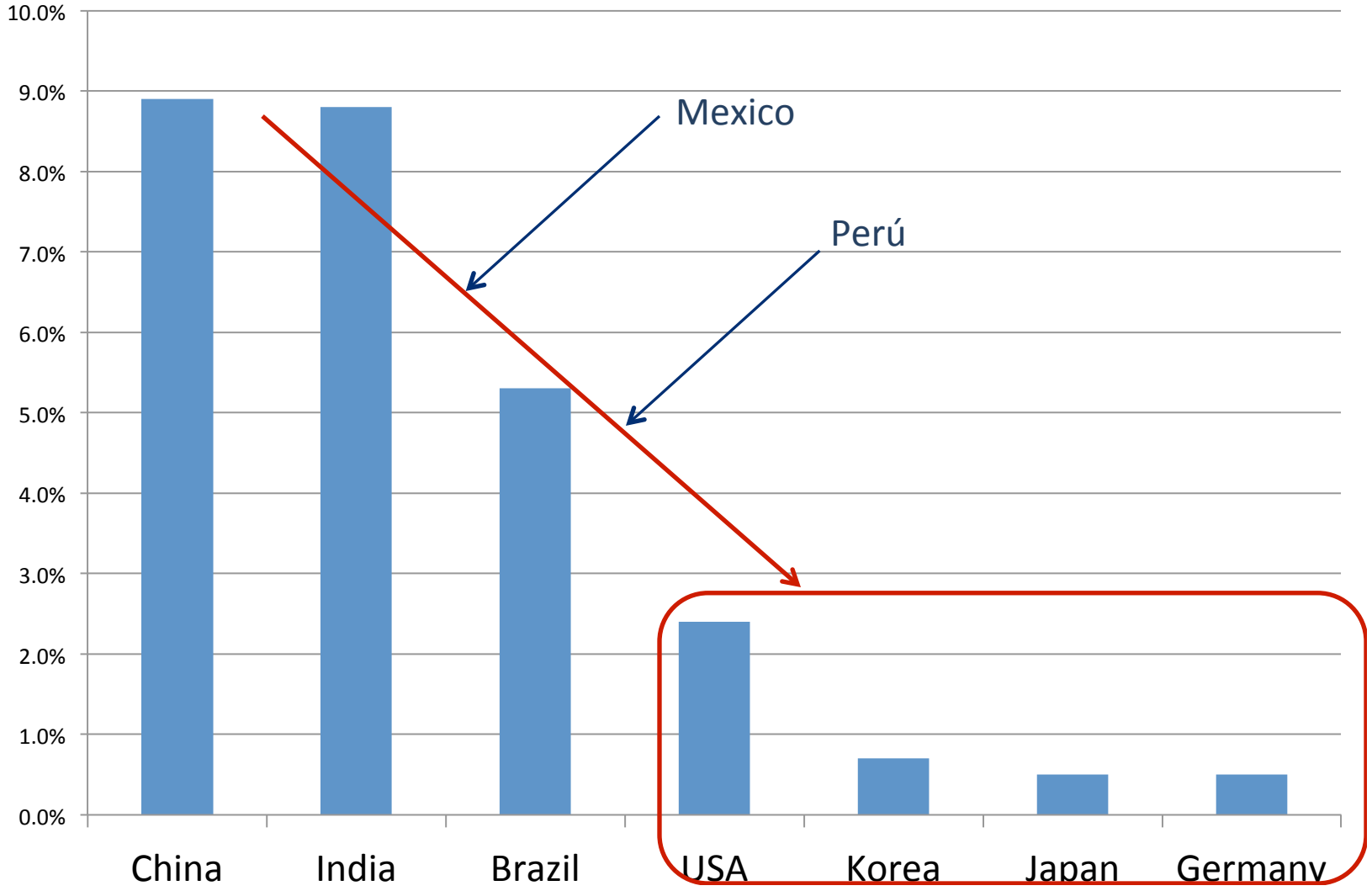
Future economic losses when pollution leads to premature deaths and chronic disease.

El reto macro-economico: Reducir la brecha entre el PIB Tradicional y "Verde"



Ejemplo de China: Crecimiento de la renta neta ajustada (aNNI), sustrae daño ambiental y agotamiento de recursos de la renta neta (NNI).

Degradación y Agotamiento ambiental y de recursos naturales como % of PIB (World Bank, 2010)



The difference between GDP and Green GDP are environmental externalities

- Externalities are the difference between private and social costs
- They don't have market prices, but are important in shaping environmental policies
- Air pollution is, globally, the largest environmental externality
  - 7 million deaths annually (1 of every 8)
  - 47% due to urban air pollution; 53% due to indoor air pollution
- Land degradation and water scarcity are the most difficult environmental externalities to manage

Costos y Objetivos Ambientales en China

(% del renta bruta nacional)

Environmental depletion and degradation	2009 value	"Greene… r…	
Natural Resources			
Energy depletion			
Mineral depletio…			--
Soil nut…			0.9
		2.2%	**1.9%**
…l damage	2.8	0.1	2.7
	0.5	0.1	0.4
…ution health damage	0.5	0.1	0.4
…total	**3.8%**	**0.3%**	**3.5%**
Climate Change	**1.1**	**0.2**	**0.9**
Total depletion & degradation	**9.0**	**2.7**	**6.3**

Debido a estas externalidades, el primer ministro de China se declaró "una guerra contra la contaminación, igual que la guerra contra la pobreza." (Feb, 2014)

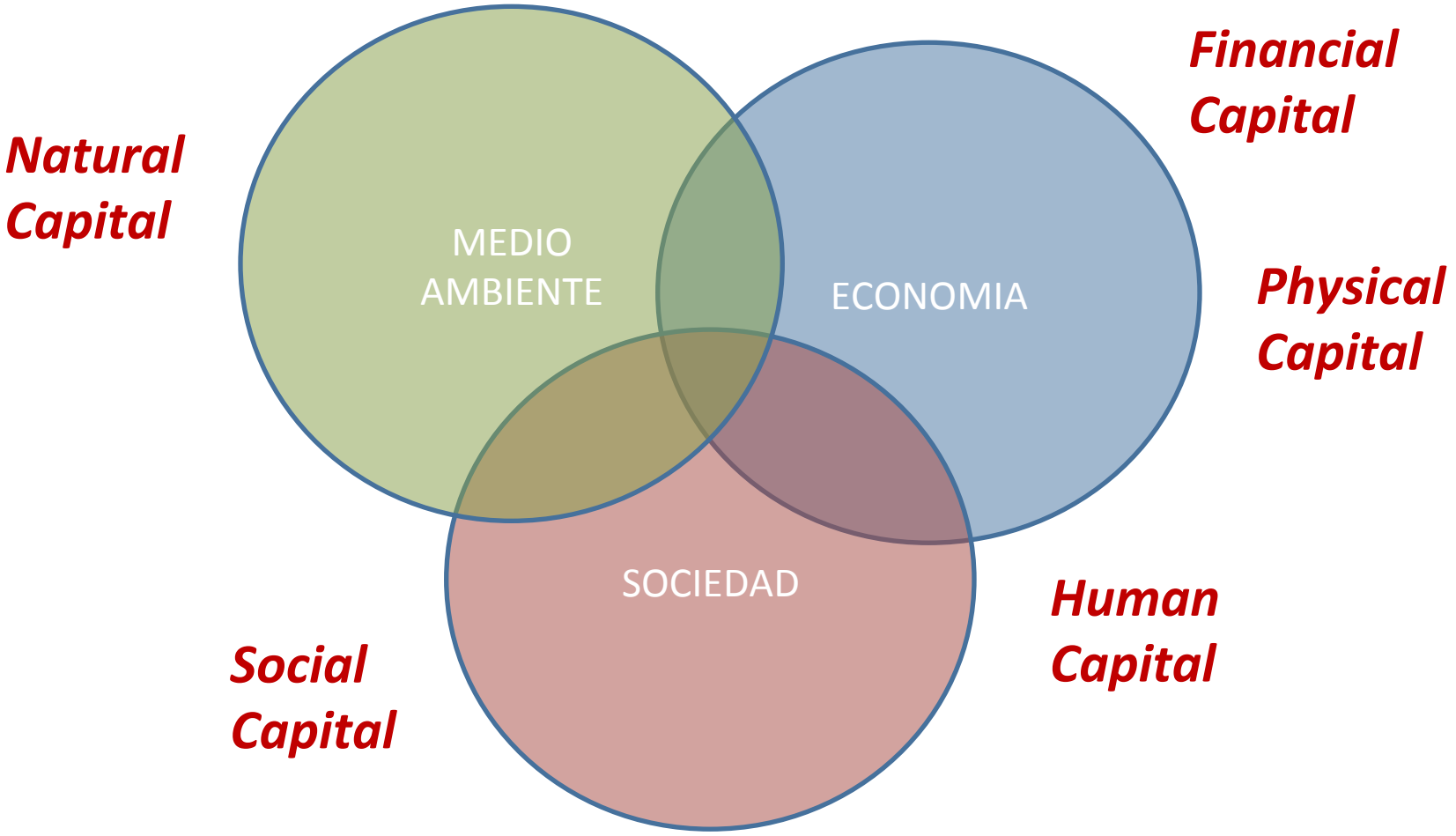
I have three messages for you today:

1. We can define and measure green growth

2. **Green growth is an annual flow concept, different from the valuing the total stock of natural capital.**
   - Capital stocks are required to generate a flow of income.
   - Some environmental externalities used to calculate green growth are flow concepts not part of valuing natural capital stocks
   - For example, urban air and water pollution damages people more than ecosystems

3. Green growth also means saving for the future

Different forms of capital, or wealth - are required to generate income or well-being



Capital gets trans-formed from one form to another, over and over

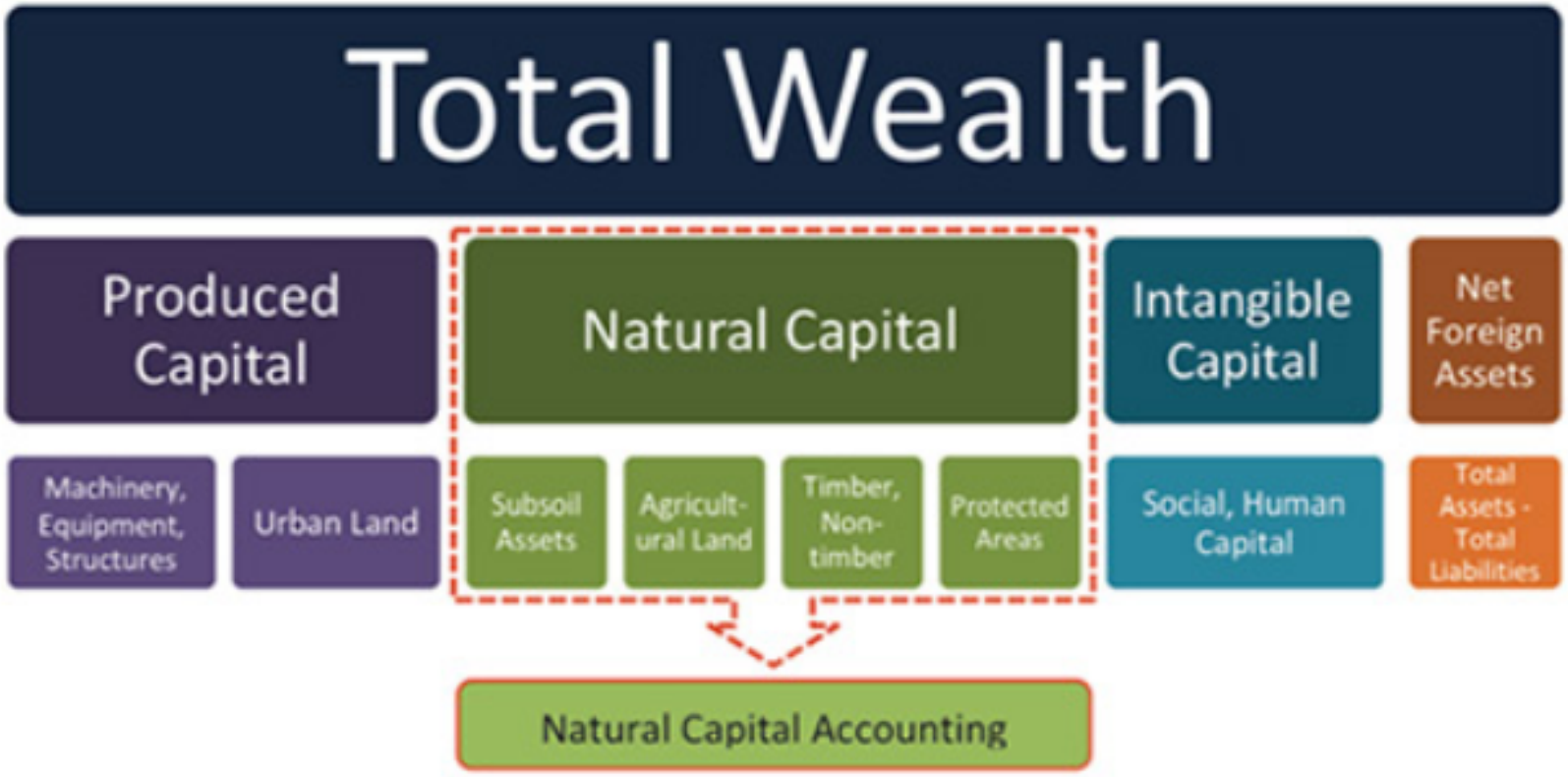
But one form of capital typically only depletes and degrades…

… without careful management and re-investment – and that's natural capital

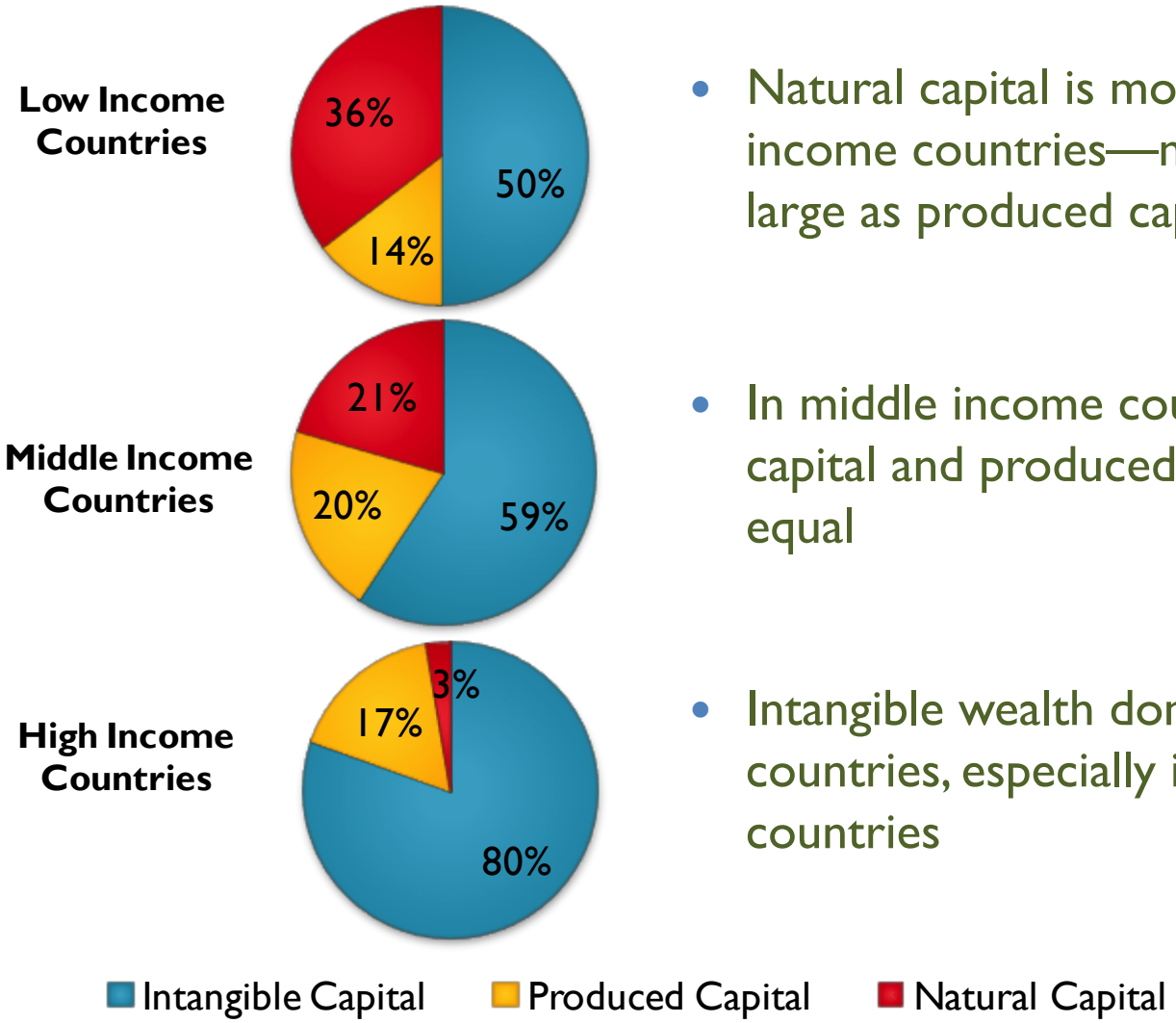
China: Loess Plateau – before

China: Loess Plateau - after

Comprehensive Wealth (or Capital, or Assets)



Shares of comprehensive wealth by income class



- Natural capital is most important in low income countries—more than twice as large as produced capital
- In middle income countries natural capital and produced capital are roughly equal
- Intangible wealth dominates in all countries, especially in high income countries

Data from 2005

I have three messages for you today:

1. We can define and measure green growth:

2. Green growth is an annual flow concept, different from valuing the total stock of natural capital.

3. **Green growth also means saving for the future**
   - **Investment is an annual flow that changes total stocks of capital, whether physical, human or natural.**
   - **If we don't save and reinvest, future generations won't have the capital needed to generate future income**
   - **Over 50% of Latin American countries are not saving enough, which means their capital stock is declining**

Cambio en el capital total per capita es un indicador macroeconomico de la sustenibilidad

1. El indicador fundamental:

Cambio en la riqueza total per cápita, donde la riqueza se define como formas físicas + naturales + humanas de capital

- Pregunta clave: **estamos ahorrando bastante para el futuro?** Se requiere una mayor riqueza a través del tiempo para lograr tener crecimiento.

La sostenibilidad débil permite la conversión de una forma de capital a otra a través de la inversión, aunque hay límites a las pérdidas sostenibles del capital natural.

Con el crecimiento de la población, un país necesita todavía más capital para mantener el mismo nivel de ingreso.

La definición de:
"Cambio en el capital total per capita"

(1) Change in financial capital per capita:

+ gross national savings (i.e GNI - private consumption - public consumption + net current transfers)

(2) Change in produced capital per capita:

- replacement value of capital used in production process

(3) Change in human capital per capita:

+ current expenditures on education

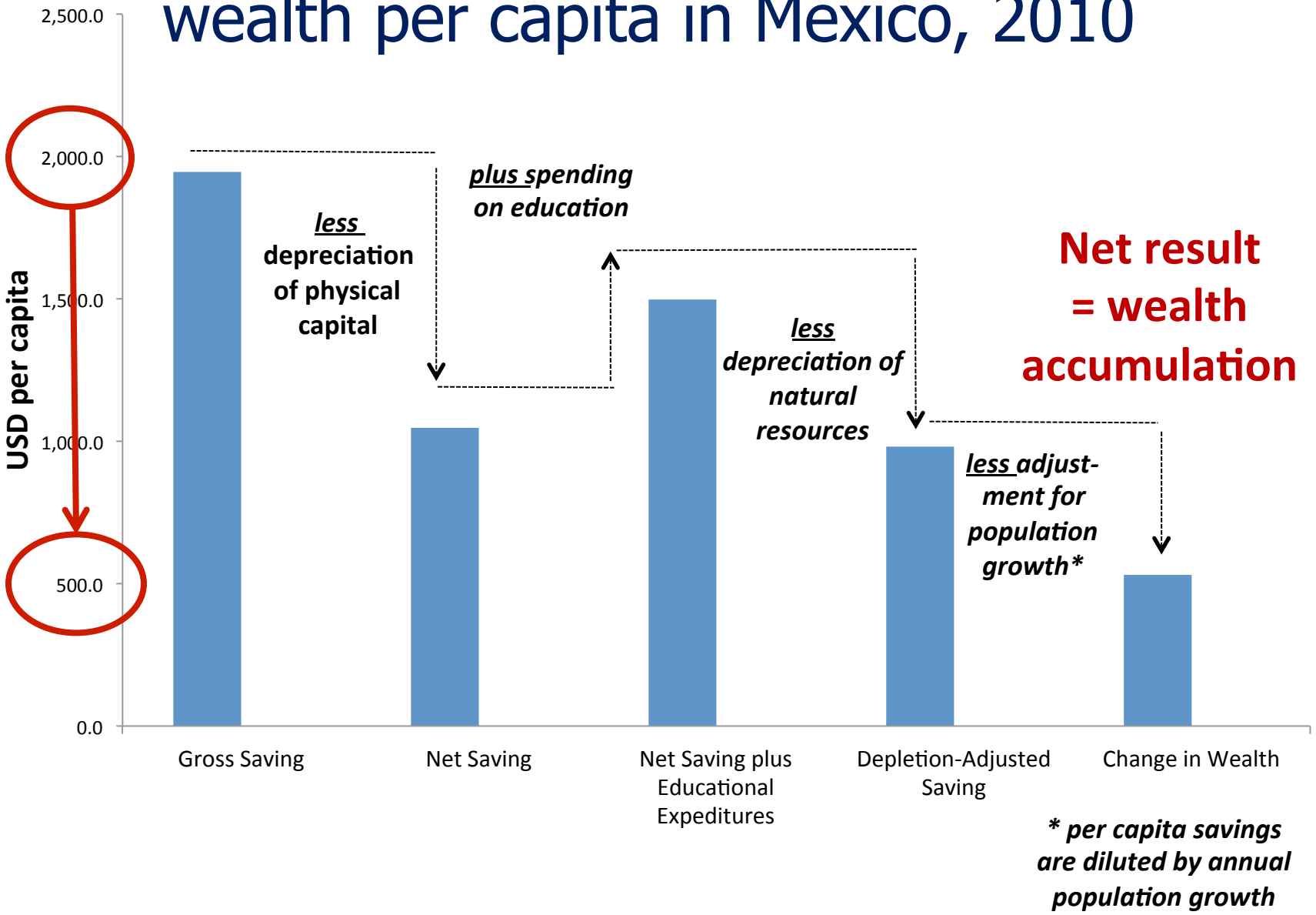
(4) Changes in natural capital per capita:

- ***depletion of energy*** (i.e. coal, crude oil, natural gas),
- ***depletion of minerals*** (i.e. tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, and phosphate)
- ***depletion of forest resources*** (i.e. excess of roundwood harvest over natural growth valued at unit export price times rental rate).
- ***pollution damages*** (i.e. life years lost due to pollution valued at public willingness-to-pay).

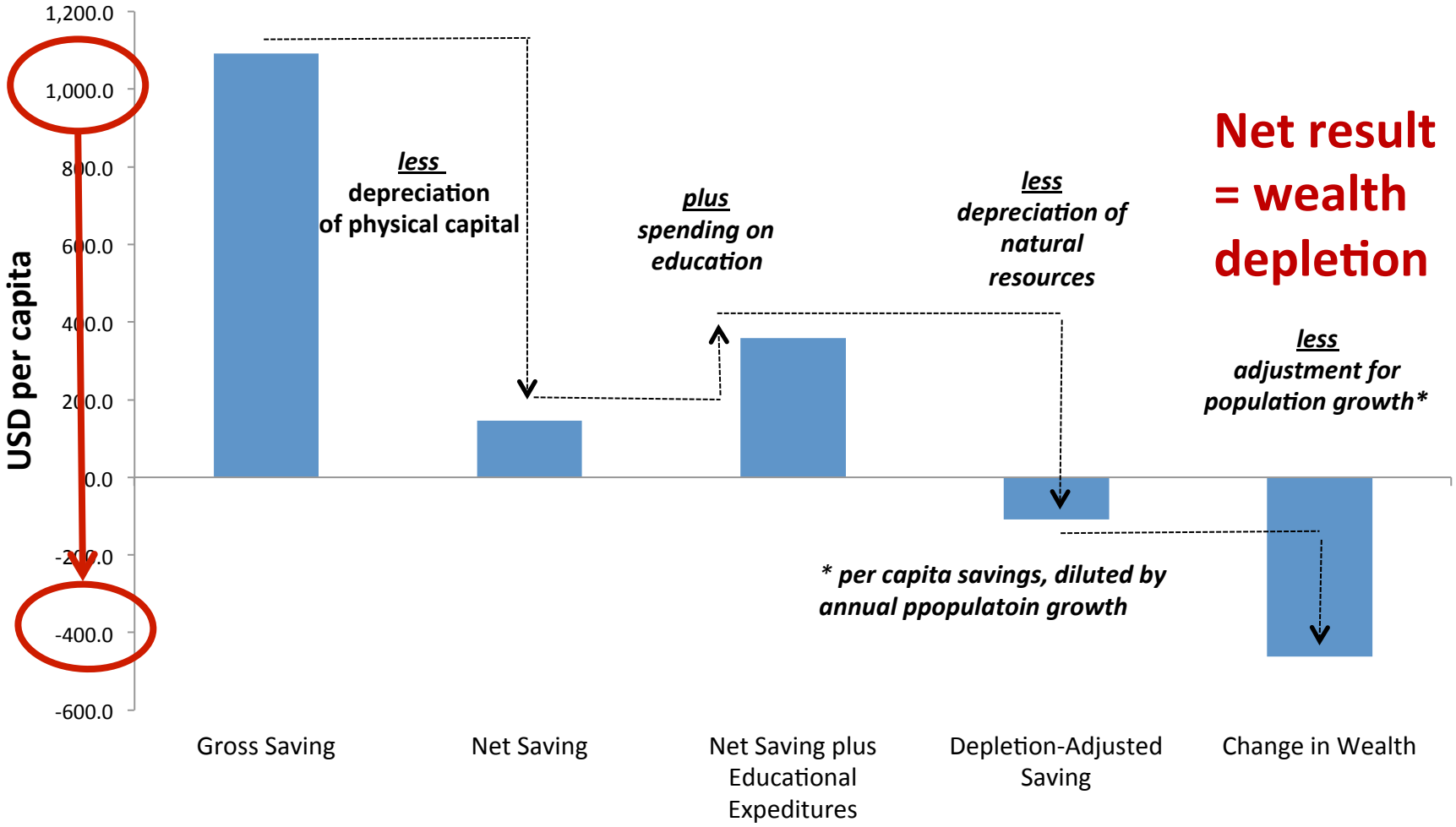
(5) Wealth-diluting effects of population growth:

- the additional savings needed to keep current total wealth in per capita terms constant with changing population

Example 1: Calculating changes in total wealth per capita in Mexico, 2010



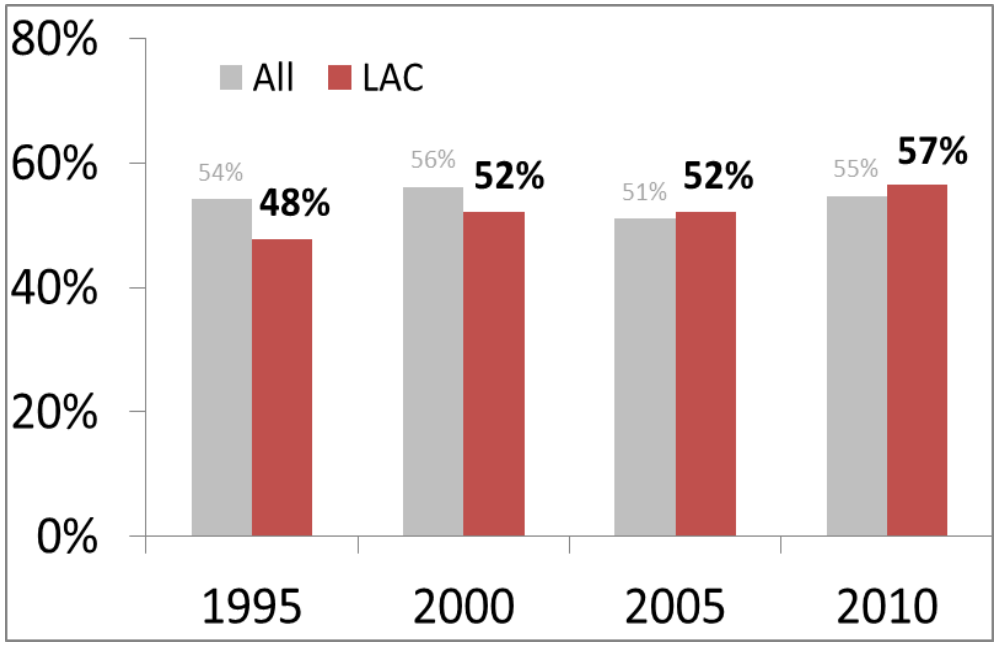
Example 2: Calculating changes in total wealth per capita in Colombia, 2010



Se necesita capital físico, humano y natural para crear ingresos para generaciones futuras...

Pero America Latina no anda bién en esta dimensión

Taza de participación de los países con el agotamiento de la riqueza



Source: World Bank: datos de 23 países en latinamerica.

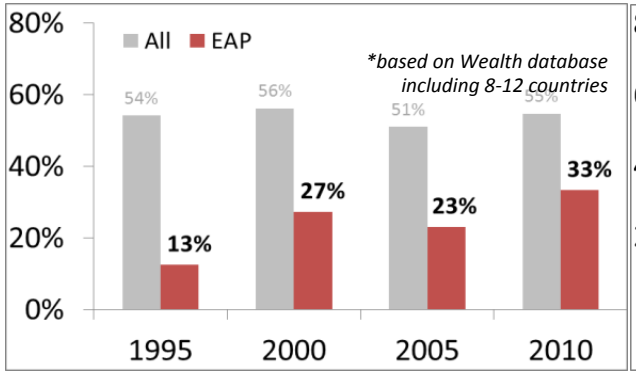
1. **Más que la mitad de países de America Latina agotean su capital**
   - 57% en 2010
   - Es una taza es más alta que en Asia (Este, Sur, y Central), y en el Medio Oriente. Sóla Africa tiene una tasa mayor.

2. **La tasa está peorándose**
   - Durante los 15 años pasados, se ha subido desde 48%

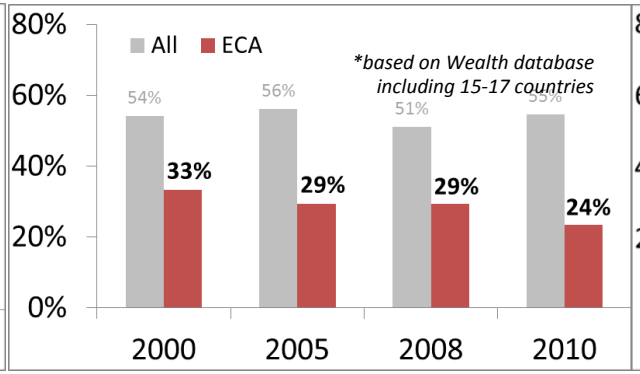
Comparing Trends Across Different Regions

The share of countries with evidence of unsustainable economies – i.e., those that undermine their ability to sustain income and welfare in the future – is increasing (based on changes in wealth per capita measuring gross savings adjusted for changes in produced, human and natural capital and population growth)

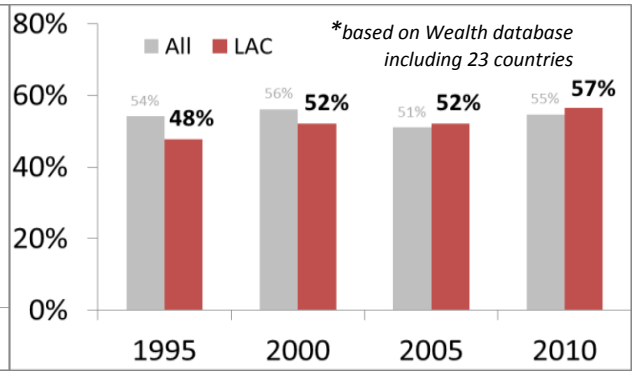
East Asia & Pacific



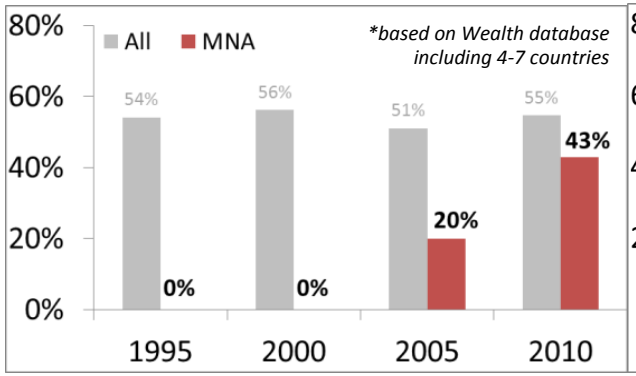
Europe & Central Asia



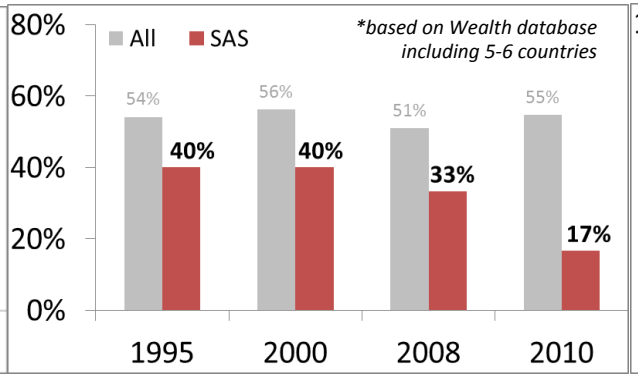
Latin American & Caribbean



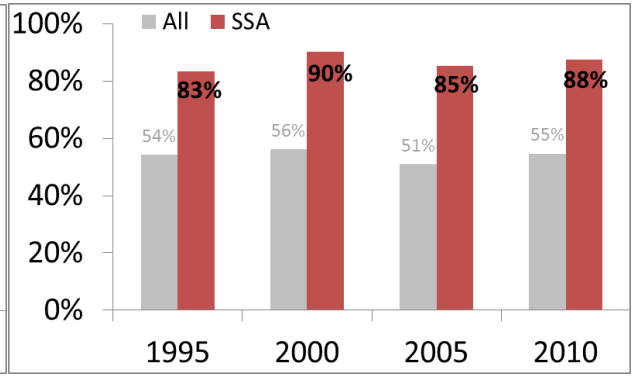
Middle East & North Africa



South Asia



Sub-Saharan Africa



Conclusions:

1. **Green growth increases national income while also reducing environmental costs (externalities)**. Economic growth that does not do this is not green.
2. **Green growth requires investments**. Like any investment, it imposes costs but can also generate high returns.
   - Some returns are immediate (e.g., higher income due to efficiency gains)
   - Other returns come in the medium and long term (e.g., improved human capital through improved health).
3. **Investment improves the quantity and quality of a country's total wealth**, thereby contributing to both sustainability and growth.

Gracias

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