

Growing fruits?

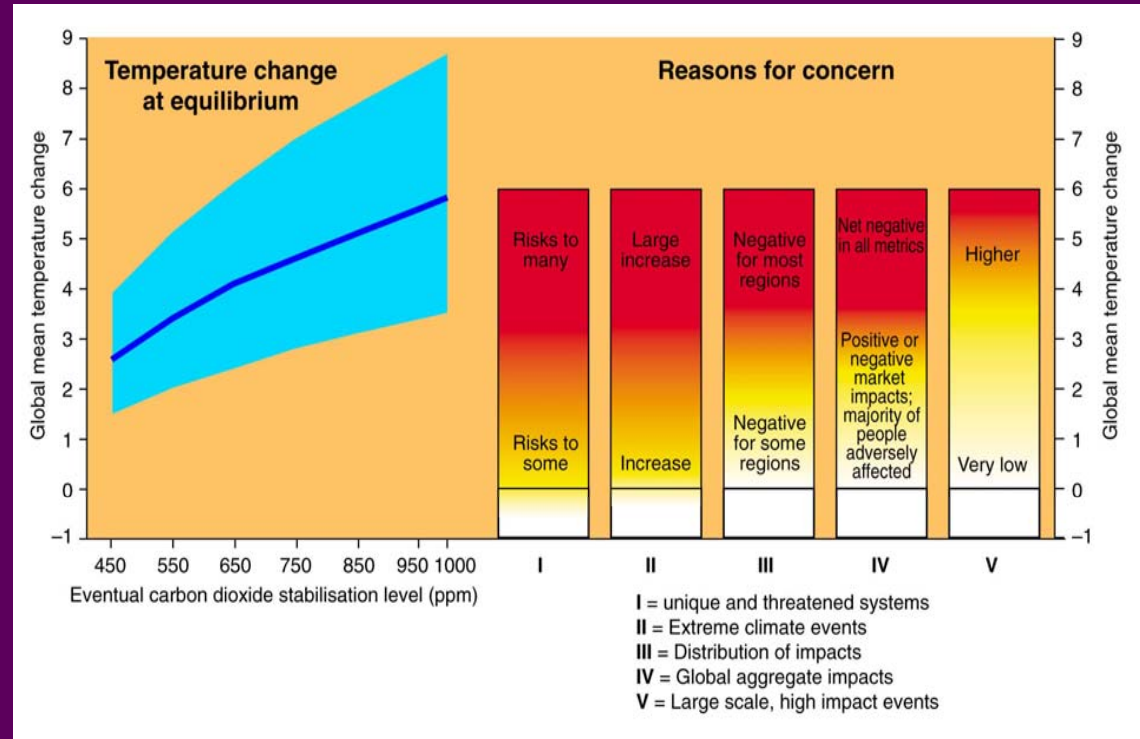
Carbon Finance in Climate Policy: Policies To Expand CER Supply

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Climate Change Already Happening...

- Stabilisation of CO₂ at 550 ppm implies a temperature increase of between 2 and 5 C.
- A 1.5 degree increase implies Caribbean coral collapse, and further hurricane increases
- A 2.5 degree implies Amazonian collapse
- And 550 ppm is very likely to be too little – need to think in terms of 500ppm – and we are now at 370 ppm



Different Interests

US / UNFCCC based: Technology; finance?

Europe / Kyoto based: Targets, but not against technology targets. Nervous interest in buying. G8 summit as a tenuous consensus around action and finance.

LAC / Carbon finance, adaptation? How to finance climate change?

Main Arguments

Carbon finance is part of a larger climate change agenda

- **An Opportunity:** The world will invest 16 trillion in new energy infrastructure between now and 2030, 2 trillion more to reduce carbon. LAC likely to require 0.6 trillion in clean energy plus massive adaptation insurance/mechanisms
- **A Problem:** Climate change will be a major regional problem in the next decades; a policy framework to face it can help adapt, increase carbon relevance, and expand CER supply.
- **A Changing Role:** Current CDM focused on projects within existing infrastructure; 10 15 framework will not be effective; but programmatic approaches could if combining policy, finance, and technology introduction could help offset domestic sustainable development and transition costs.
- **An Agenda:** Take advantage of parallel financial and political tracks to influence the discussion agenda and help finance the transition.

Climate needs to move into the economic development agenda.

Work Plan

Present some regional impacts

Examine scale of challenge and barriers for investment through examples

Present analysis of how to link finance, policy and technology through programmatic approaches

Suggest links with evolving international discussion on finance

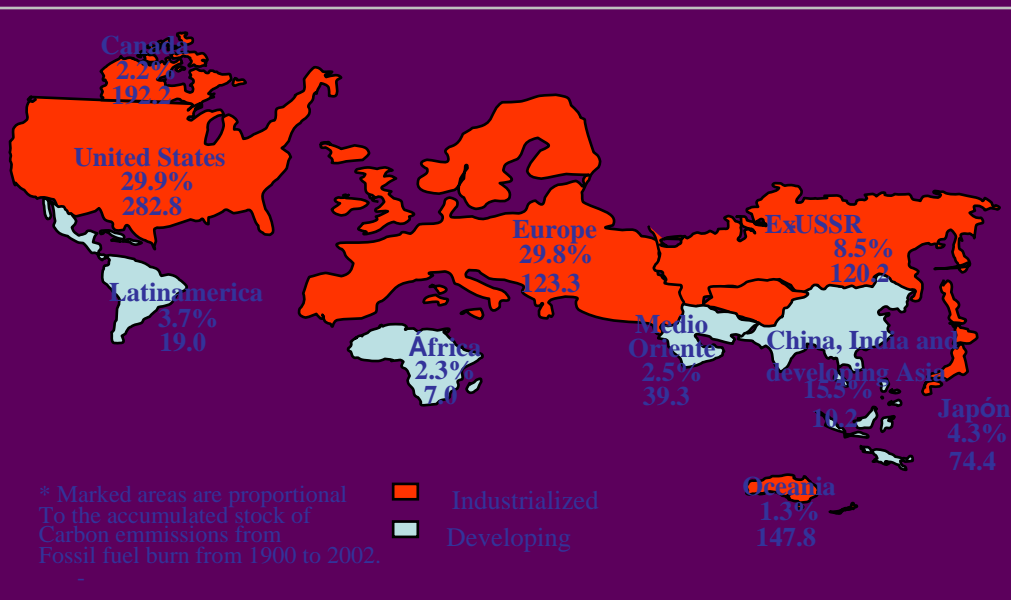
Suggest an agenda for action

Regional Challenges and opportunities

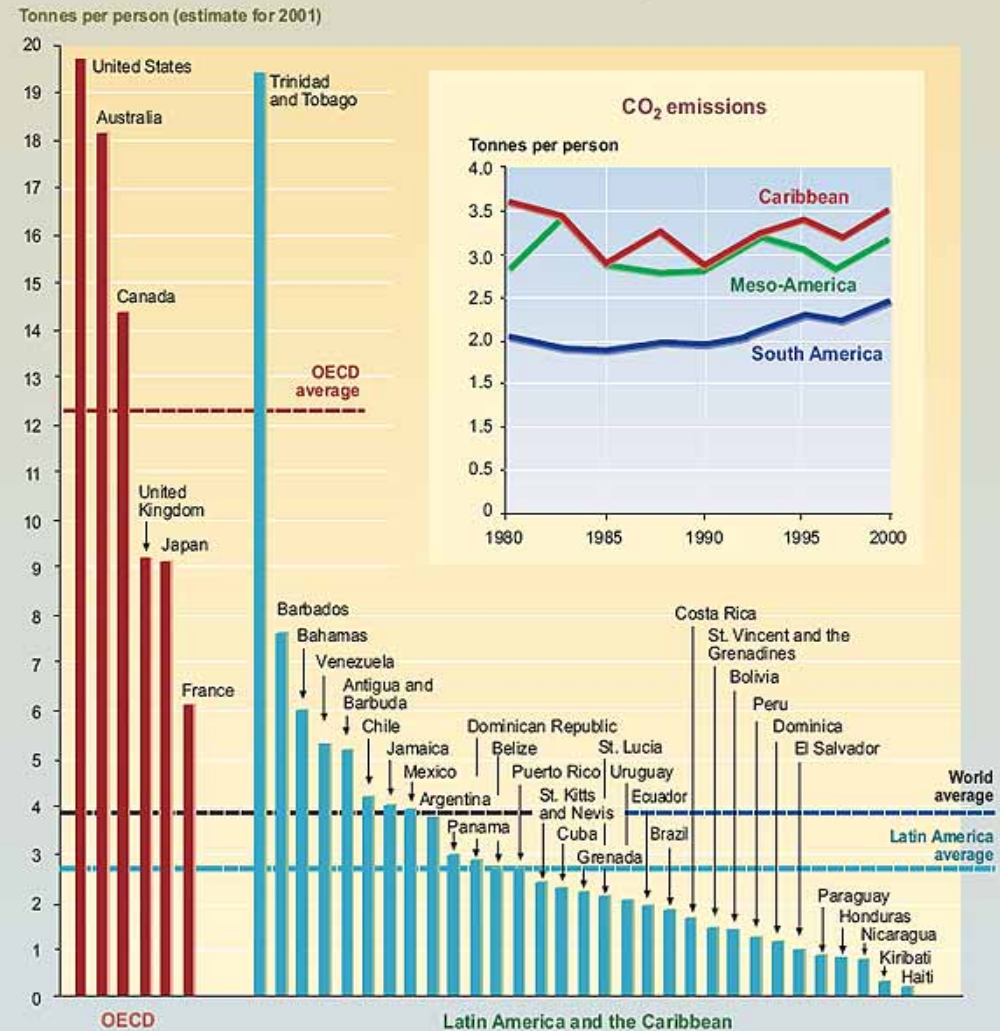
The region:

- does not make over average world emission or stocks contributions
- has great carbon potential

CO₂ Stock 1900-2002 per region
(Total stock and total /CO₂ *hab. for '99)

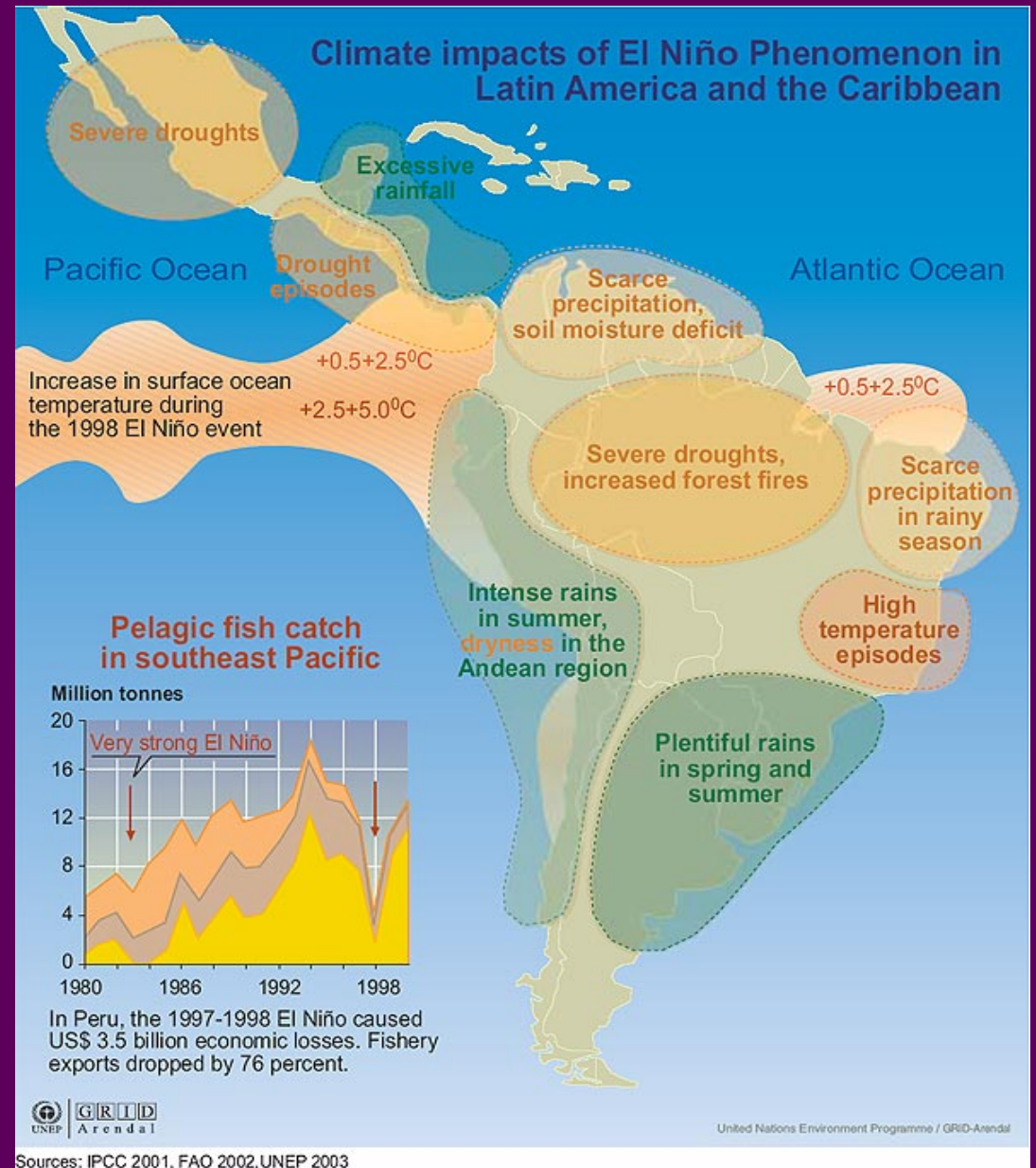


CO₂ emissions per person in Latin America and the Caribbean compared to world and OECD average emissions



Sources: World Bank 2004; Carbon Dioxide Information Analysis Center 2004; WRI, Earth Trends, Climate and atmosphere, Trinidad and Tobago: http://earthtrends.wri.org/pdf/library/country_profiles/CI_cou_780.pdf

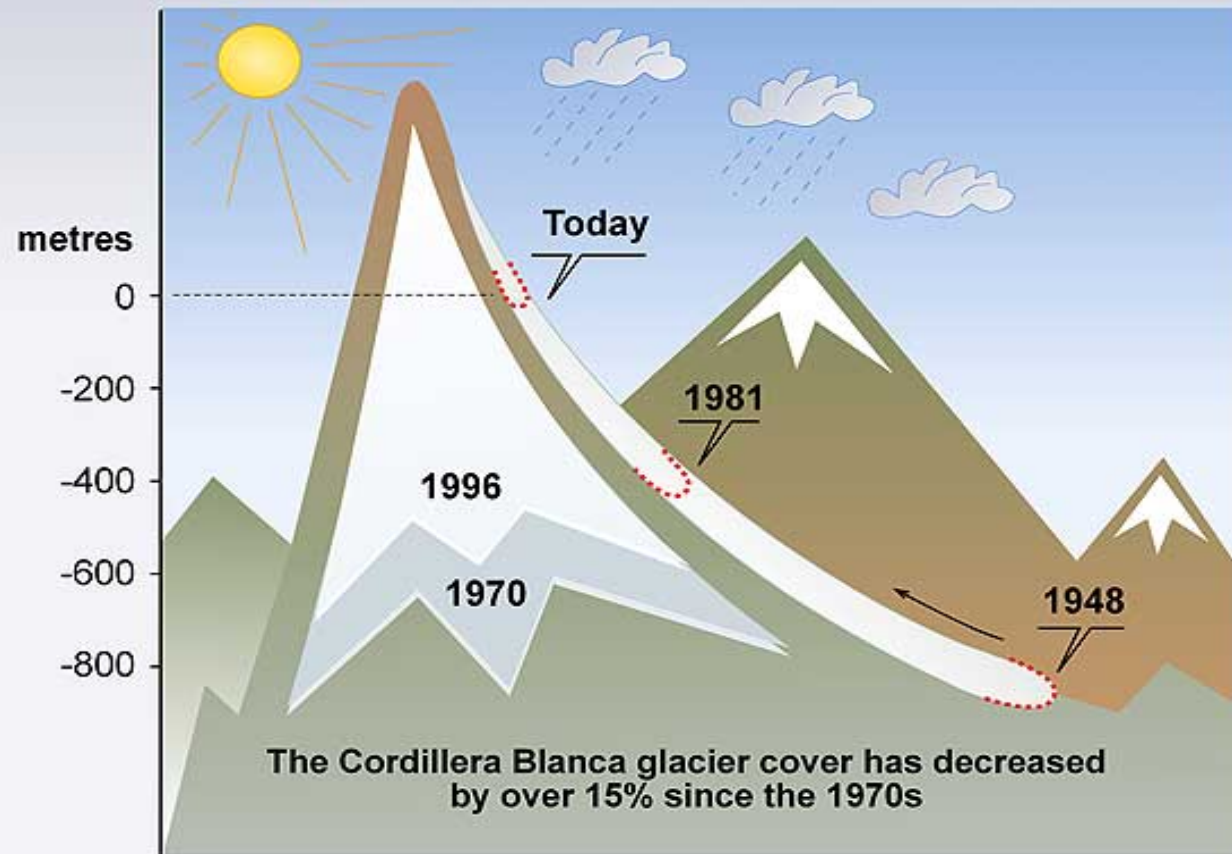
But is already suffering more frequent and intense El Niño Impacts...



...glacier retreats....

Rapid retreat of glaciers in the Cordillera Blanca, Peru

Broggi Glacier terminus elevation



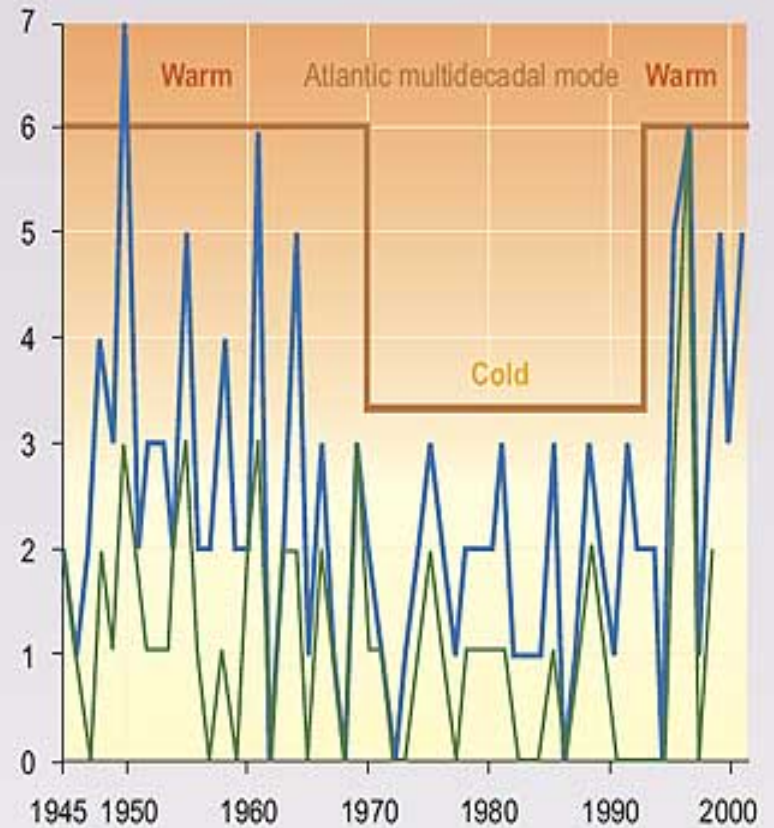
Increasingly frequent and severe hurricanes...

Intense hurricanes in the Atlantic Basin

Frequent tracks of tropical cyclones



Number of hurricanes

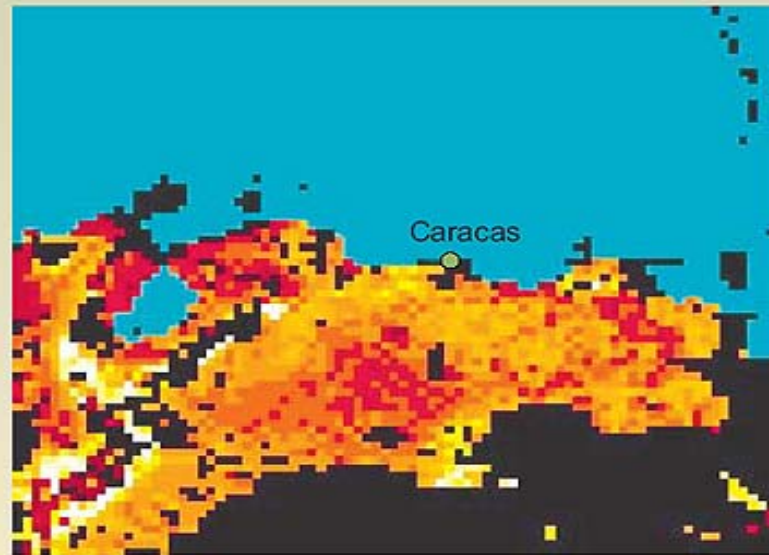


United Nations Environment Programme / GRID-Arendal

Sources: NASA 2003; Hulme and Sheard 1999 d

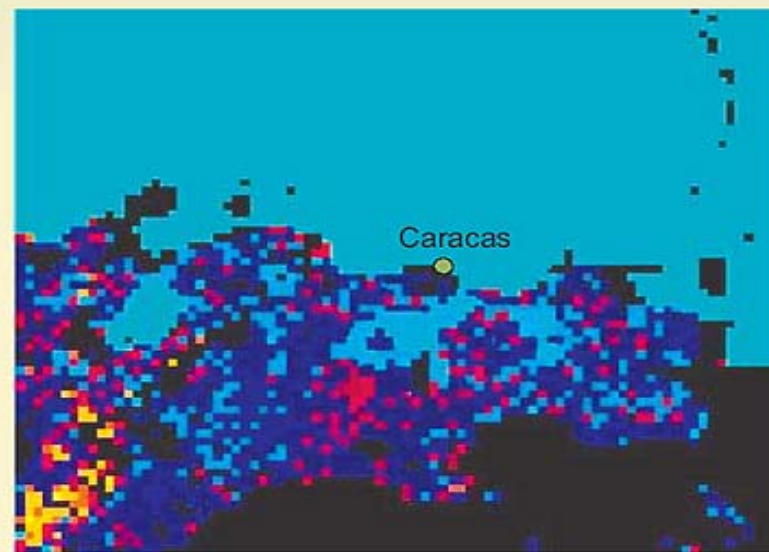
And potentially massive agricultural changes.

Projected changes in maize crops, Venezuela



Present

Yield, kg per ha



Year 2055
(modeling)

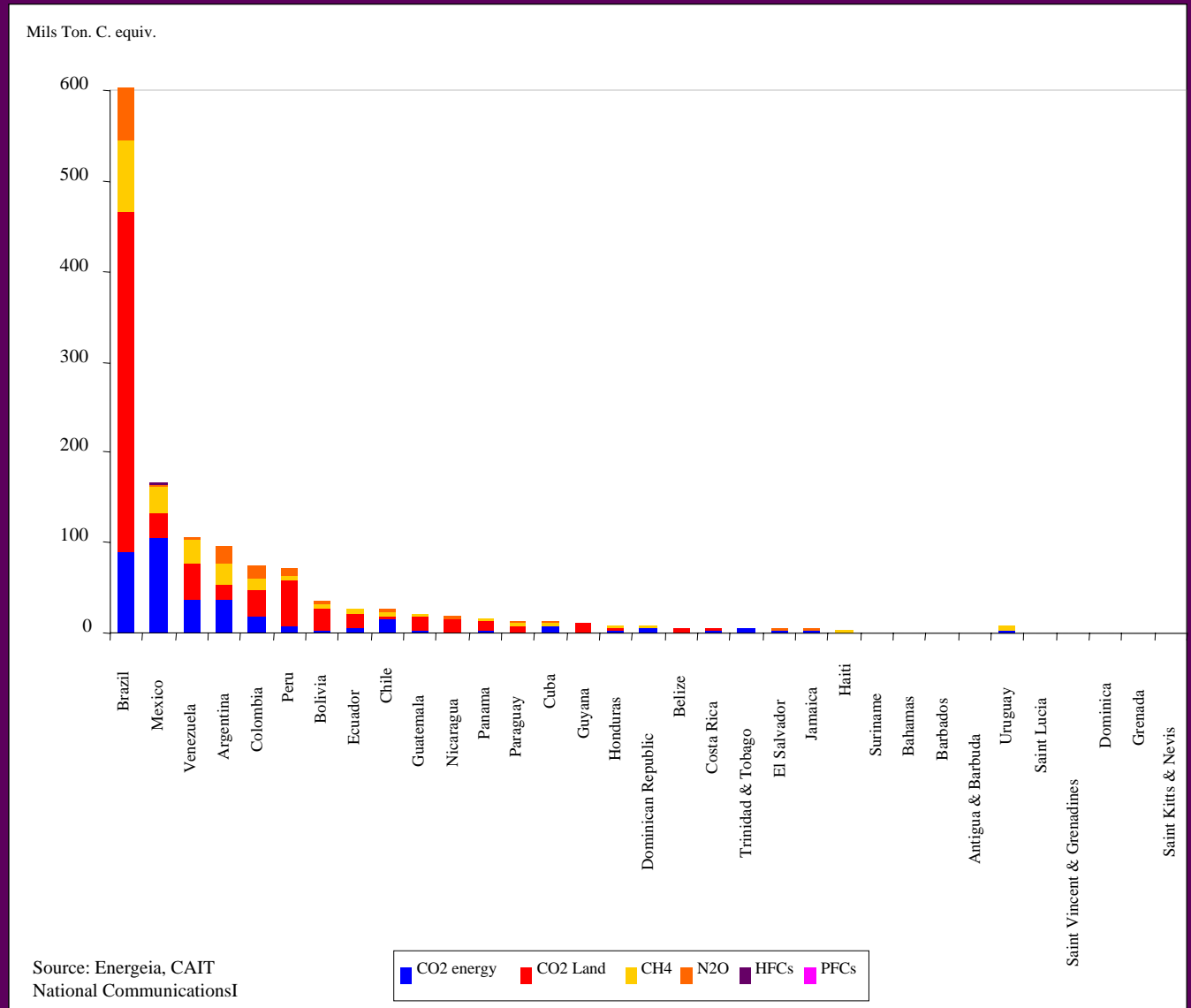
Change, kg per ha



Source: International Center for Tropical Agriculture

While not all countries are the same...

There are significant differences in size, source, and composition.



The region is likely to face massive economic impacts...

Increases in frequency and intensity of El Niño event.

ENSO

1982 – 83 : 12% of the Peruvian GDP, 8.5% agriculture production 40% fishing reduction.

1996 –97 : Total costs 15,480 million dollars; Andean region lost 7,545 US\$ million (95% of Bolivia's 1997 GDP, or 32% Venezuela's exports). Ecuador lost 14% of GDP.

Increase in severity of Hurricane Season

2004, losses of US\$ 7.55 billion. Hurricane Ivan destroyed Grenada and the Cayman Islands (200% GDP damage), Frances heavy damage to Cuba (US\$ 1.5 billion in losses).

2005 Wilma destroyed significant Cancun's tourism infrastructure; Stan hit Southeastern Mexico and Central America

Glacier loss multipliers

Lima located in one of the most arid deserts; with 80% hydro energy generation

INCREASED
RAINFALLS

INCREASED
TEMPERATURES

SEA LEVEL RISE



Health

CLIMATE RELATED
MORTALITY

INFECTIOUS
DISEASES

RESPIRATORY
DISEASES

Water

WATER PROVISION

WATER QUALITY

INCREASED
COMPETENCE
FOR WATER ACCESS

Coastal Areas

COASTAL EROSION

LOWLANDS EROSION

PROTECTION
INFRASTRUCTURE
COST

Forests

FOREST
COMPOSITION

GEOGRAPHIC
DISTRIBUTION

HEALTH &
PRODUCTIVITY

Agriculture

AGRICULTURE
PRODUCTION

WATER DEMAND

HABITAT LOSS
BIODIVERSITY AFFECTED
GLACIERS, PERMANENTLY FROZEN SOILS AND SNOW COVERED SOILS DIMINISHED

Acute need to quantify impacts!

A view from the bridge

There is a large adaptation agenda which must be pursued for its own sake. My comments simply point to the fact that if seen from an overall macro perspective, it would make sense for the countries in the region to:

- Maximize carbon revenue through policies tailored to both expand potential CER production and support climate resilience**
- Use carbon revenue within a framework that allows leveraging additional resources**
- Diminish investment risk to liberate resources and facilitate infrastructure replacement**

to offset in as much as it is possible climate change impacts.

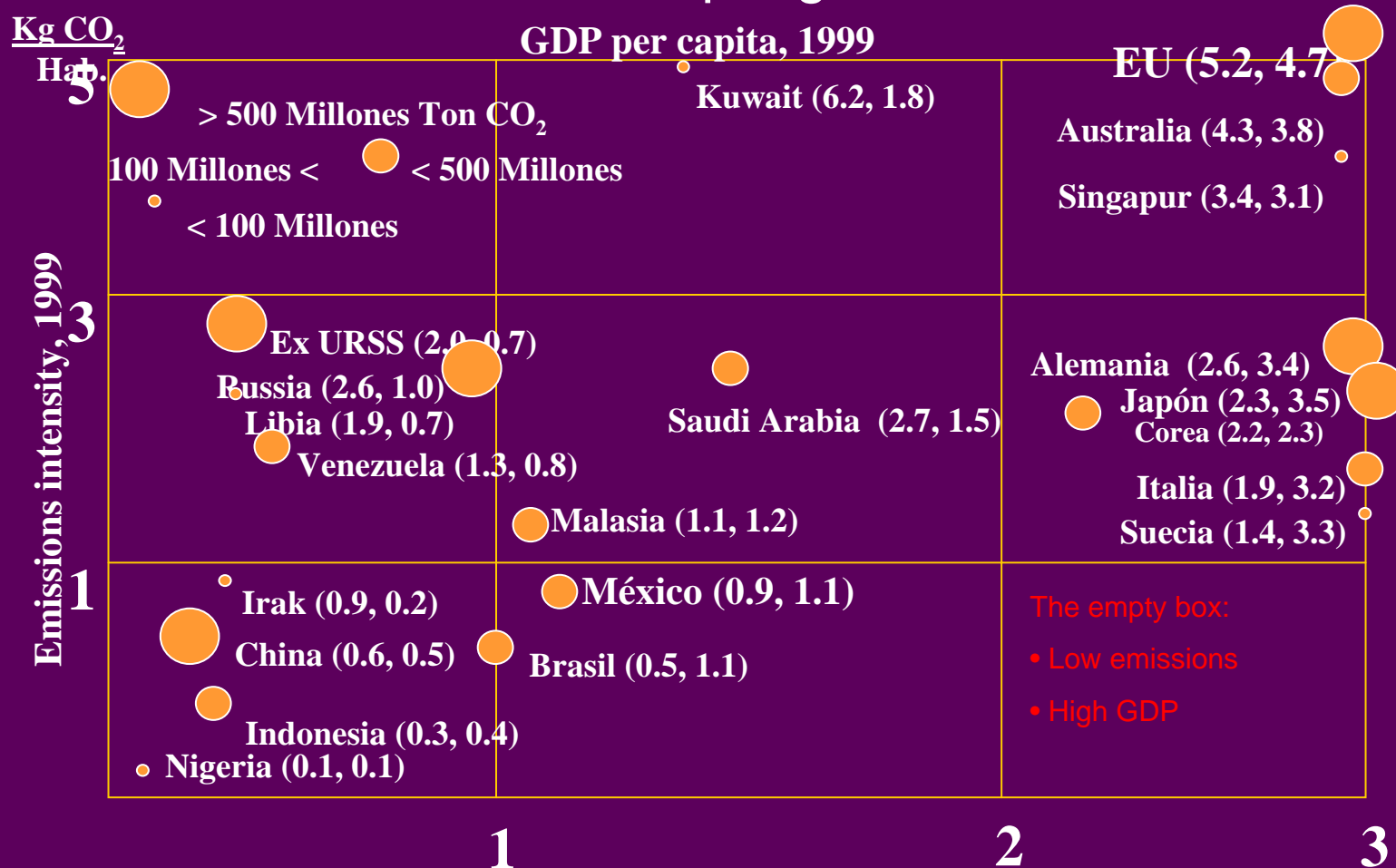
This supposes countries in the region want to act to face climate change, and implies massive policy intervention.

It also suggests the problem is not environmental or sectorial, but economic.

How to expand supply?

The challenge

To grow with less carbon, while adapting...!



Source: AIE, CO₂ Emissions from fuel combustion, edición 2001.

A new development pattern is needed

A thought experiment – Imagine a step change

Key sector

- 5% of its GDP, 8% of its exports, 40% fiscal income.

22% Underconsuming Energy

- 22% less electricity (184 vs 235 TWh) for an economy of its size, and 46% less on a per capita basis (1,832 vs. 3,379KWh).
- Income distribution improvements? energy consumption and CO2 per capita and absolute emissions increases = 9.8 to 28.3%.

Not particularly dirty: World average KWh/CO2

- 85% PES supported by hydrocarbons,
- Fifth within OECD, below US (579 grams per KWh generated, vs. 581 grams per KWh of Mexico 2002).

Assume a policy maker would seek major changes under current Mexican policy conditions.

Employ a proxy of recent (1990 – 2002) emission performance trends in different regions (e.g. OECD Europe, OECD, and worldwide emission average growth rate limits as examples

Thus, CO2 emission reductions would be calculated within existing Mexican policy scenarios and frameworks,

We will assume -against experience- that the portfolio of policy measures currently planned would effectively be implemented.

Modelling

Stringent goal

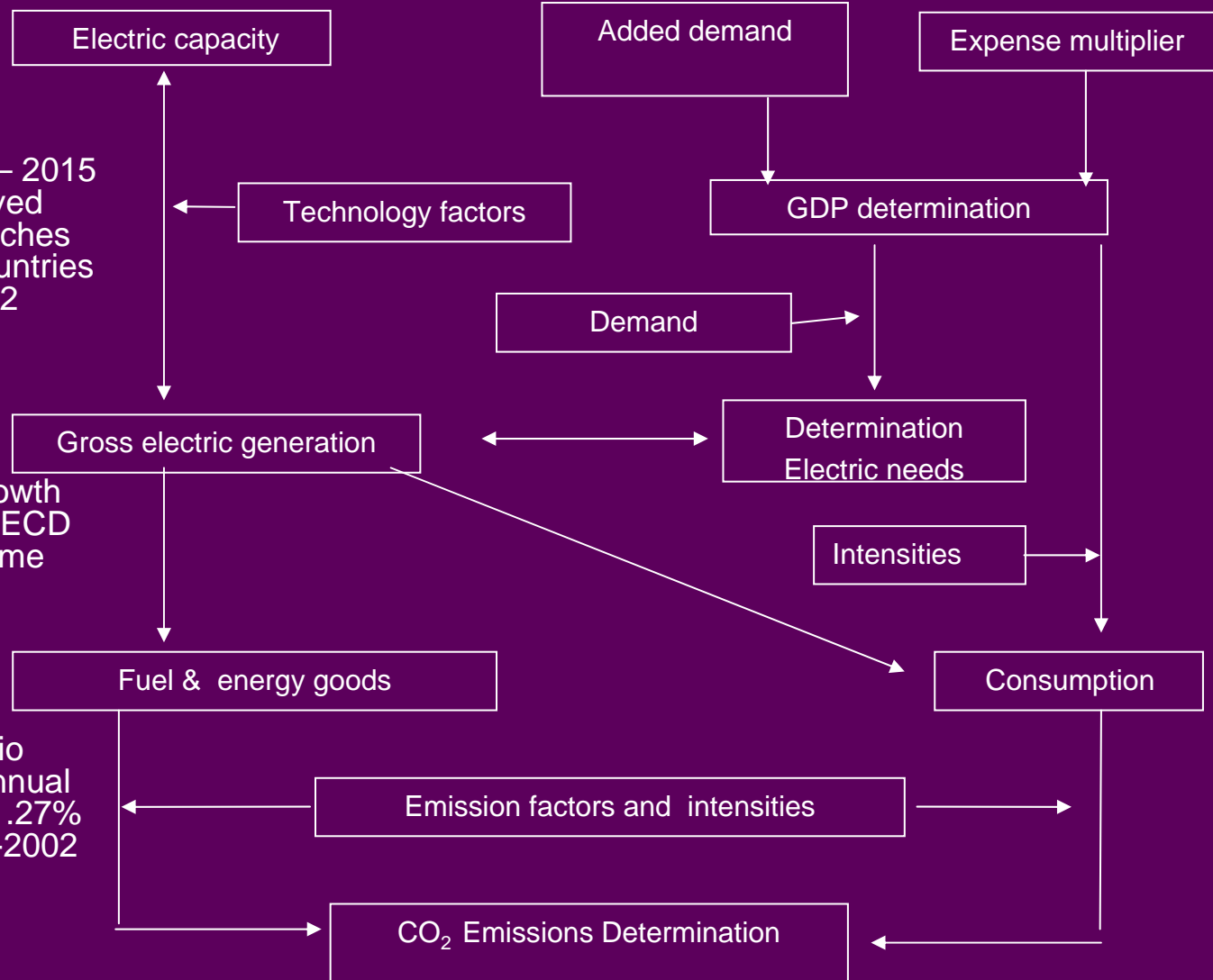
- Zero growth rate in the 2005 – 2015 period in total emissions derived from fuel combustion (approaches the 0.05% OCDE Europe countries annual emissions 1990 – 2002 period).

Intermediate goal

- emissions have an annual growth rate of 1% (near the 1.08% OECD annual average rate in the same period).

Minimum Goal

- International average scenario would assume a maximum annual growth of 1.2%, close to the 1.27% worldwide observed for 1990-2002



Baselines and Goals

Electricity gross generation GWh	Electric sector Emissions (mton CO ₂)	Total Emissions (mton CO ₂)	Emissions per capita (ton CO ₂ -inhab)
low growth			
289,803	166,127	525,696	4.327
medium growth			
339,827	194,803	616,438	5.074
improvement in income distribution in low growth scenario			
310,508	177,996	563,253	5.437
improvement in income distribution in medium growth scenario			
310,508	177,996	660,479	4.637

CO2 reductions - low economic growth scenario (2005 -2015)

- No income distribution improvements:
From 4,235 to 86,726 thousands of tons between 2005 and 2015,
- Income distribution improvements
From 4,235 to 124,283 thousands of tons in 2015.

CO2 Reductions - middle economic growth scenario (2005 -2015)

- No Income distribution improvements
From 10,010 to 177,468 thousands of tons between 2005
- Income distribution improvements,
From 4,235 to 221,509 thousands tons.

Reduction Programs

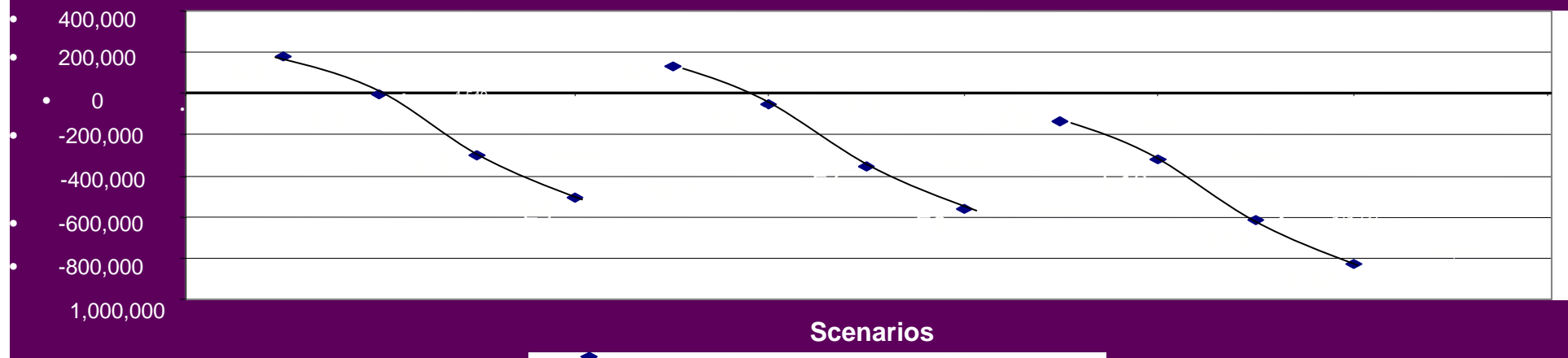
Main Impacts:

- Energy Efficiency
- Renewable Energy
- Fuel Switching

Year	Programs to reduce emissions								Total policies reduction
	Hydro	Wind	Geo thermal	Solar & wind small scale	Savings & efficiency	Fuel switching	Co generation	Other	
2005	2,967	0	0	25	15,556	2,514	622	0	21,684
2006	2,967	320	0	38	16,935	6,568	654	0	27,482
2007	5,341	320	0	51	18,348	8,672	654	0	33,386
2008	5,341	320	0	63	19,819	11,169	654	0	37,366
2009	6,615	320	0	76	21,356	14,869	654	0	43,890
2010	10,497	640	697	89	22,957	18,788	654	2,490	56,812
2011	16,247	960	697	108	24,595	22,245	1,110	2,490	68,452
2012	21,711	960	697	127	26,269	24,518	1,266	2,490	78,038
2013	25,293	1,280	697	146	28,114	29,264	1,266	2,490	88,550
2014	29,125	1,280	697	165	30,113	19,110	1,266	2,490	84,246
2015	31,502	1,280	697	184	32,285	21,061	1,266	4,981	93,256
Total	157,606	7,680	4,182	1,072	256,347	178,778	10,066	17,431	633,162

Level of Achievement – Falling Short

Scenario	Result goals-policies (mton CO ₂)	Cover goals?
E1	-183,790	Yes
E2	1,549	Partial.
E3	299,293	No.
E4	508,179	No.
E5	-129,101	Yes
E6	56,236	No.
E7	353,981	No.
E8	562,867	No.
E9	133,657	No.
E10	318,993	No.
E11	616,737	No.
E12	825,622	No.



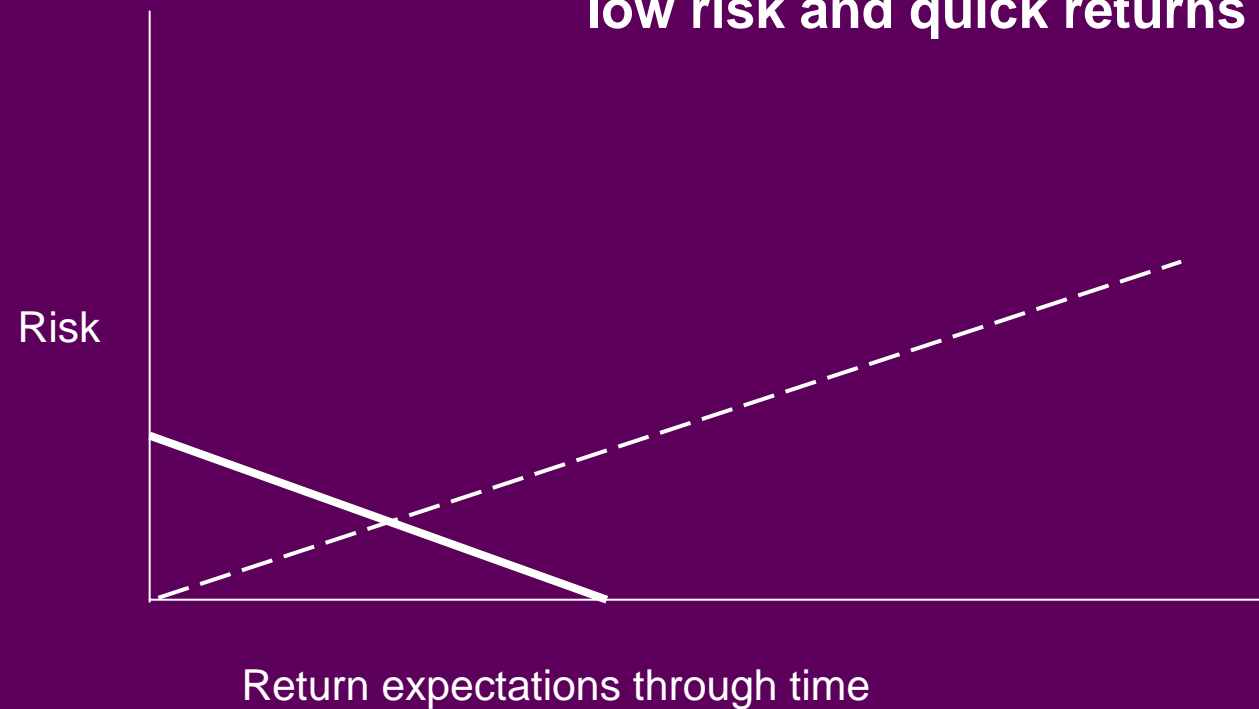
A gap

Need to expand policy base, add incentives, and integrate with sustainable development.

State cannot do it alone.

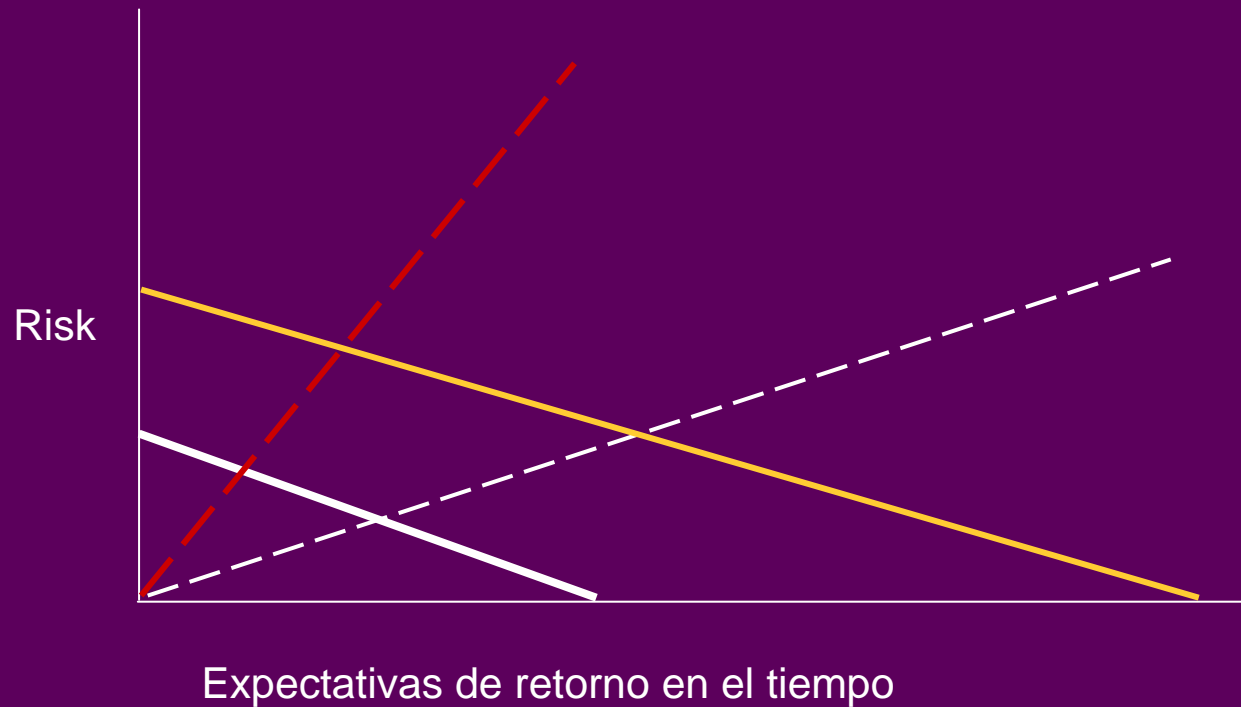
There is a gap...

Private sector is interested in low risk and quick returns



Gap

There are risk and barriers:



Policy coordination failures and political economy

Industrial Processes

- business commitment increasing, but sectorial info scarce
- Limited by methodological and carbon protocol availability

Forestry

- Methodological and knowledge limitations
- Limited supply under current conditions.
- Land tenure and project organization issues

Energy

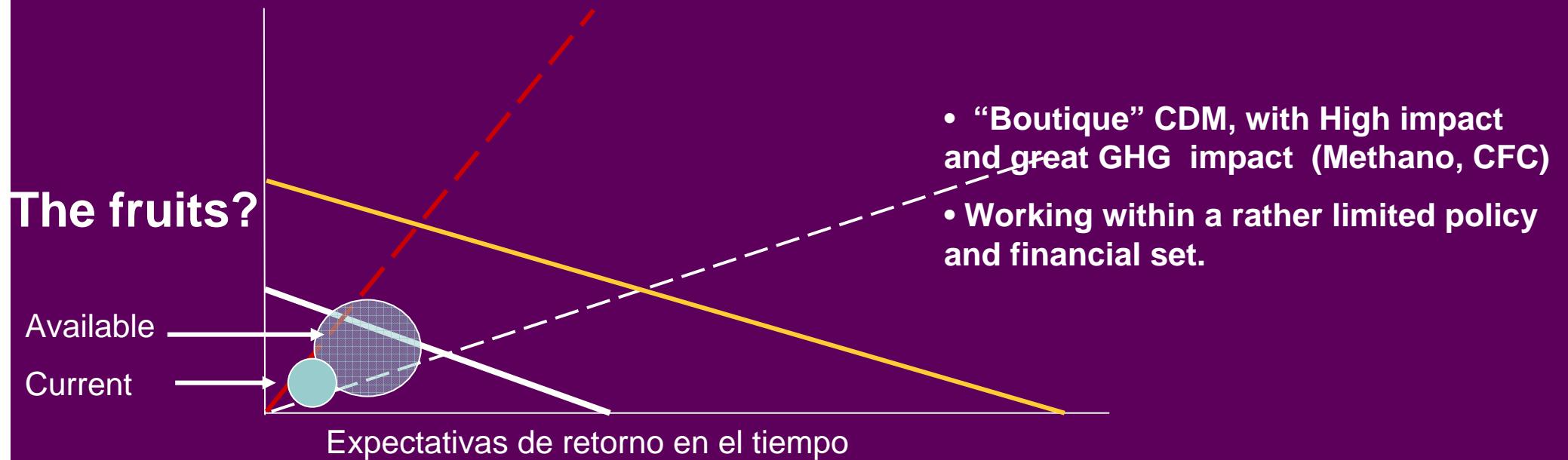
- Regulatory barriers (transmission, interconnection, capacity)
- Role of sectorial organs

Urban

- Inventory and information gaps
- Land fill opportunities and use
- Limited local developers knowledge

And low Hanging fruits as well

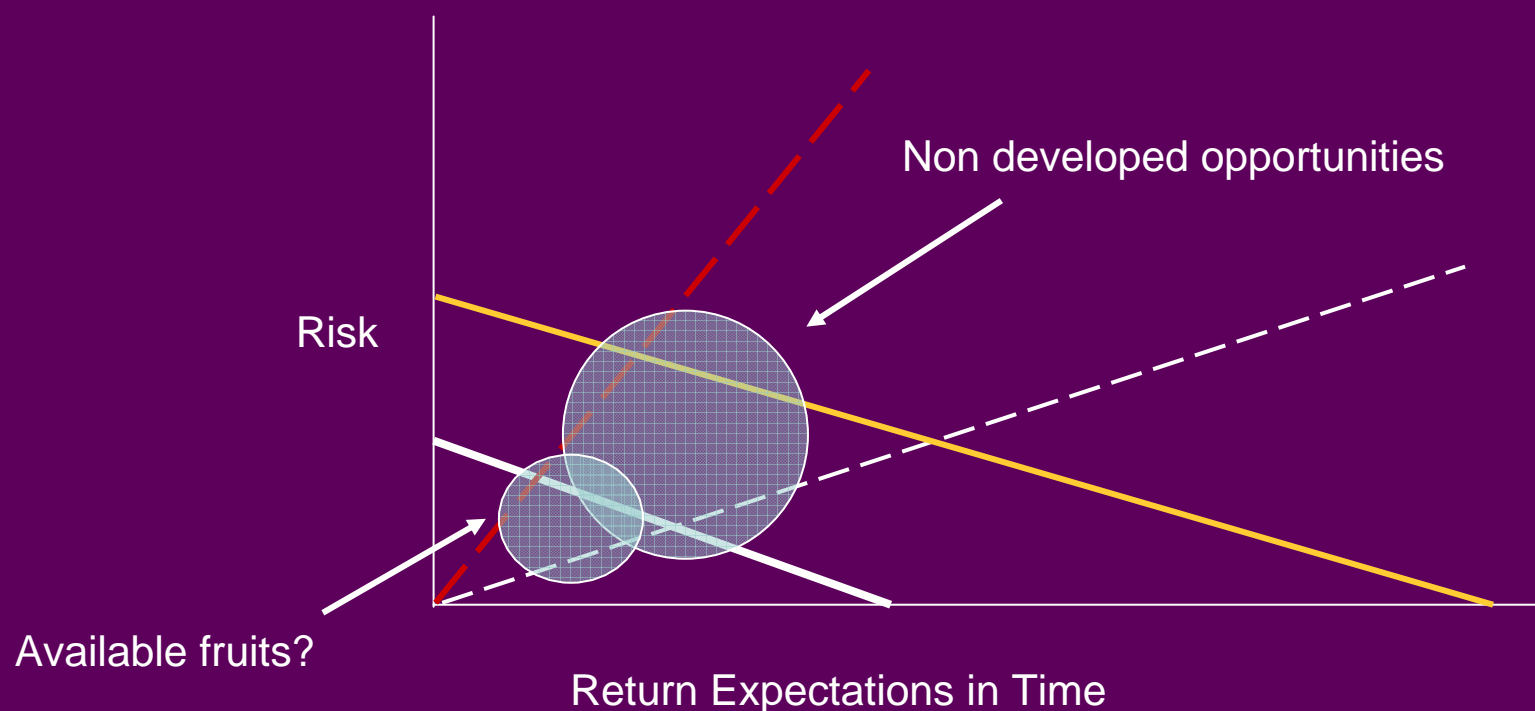
There are low hanging fruits which can be taken advantage *relatively* straightforward in energy, urban processes and forestry:



Current LAC Portfolio

How to expand opportunities?

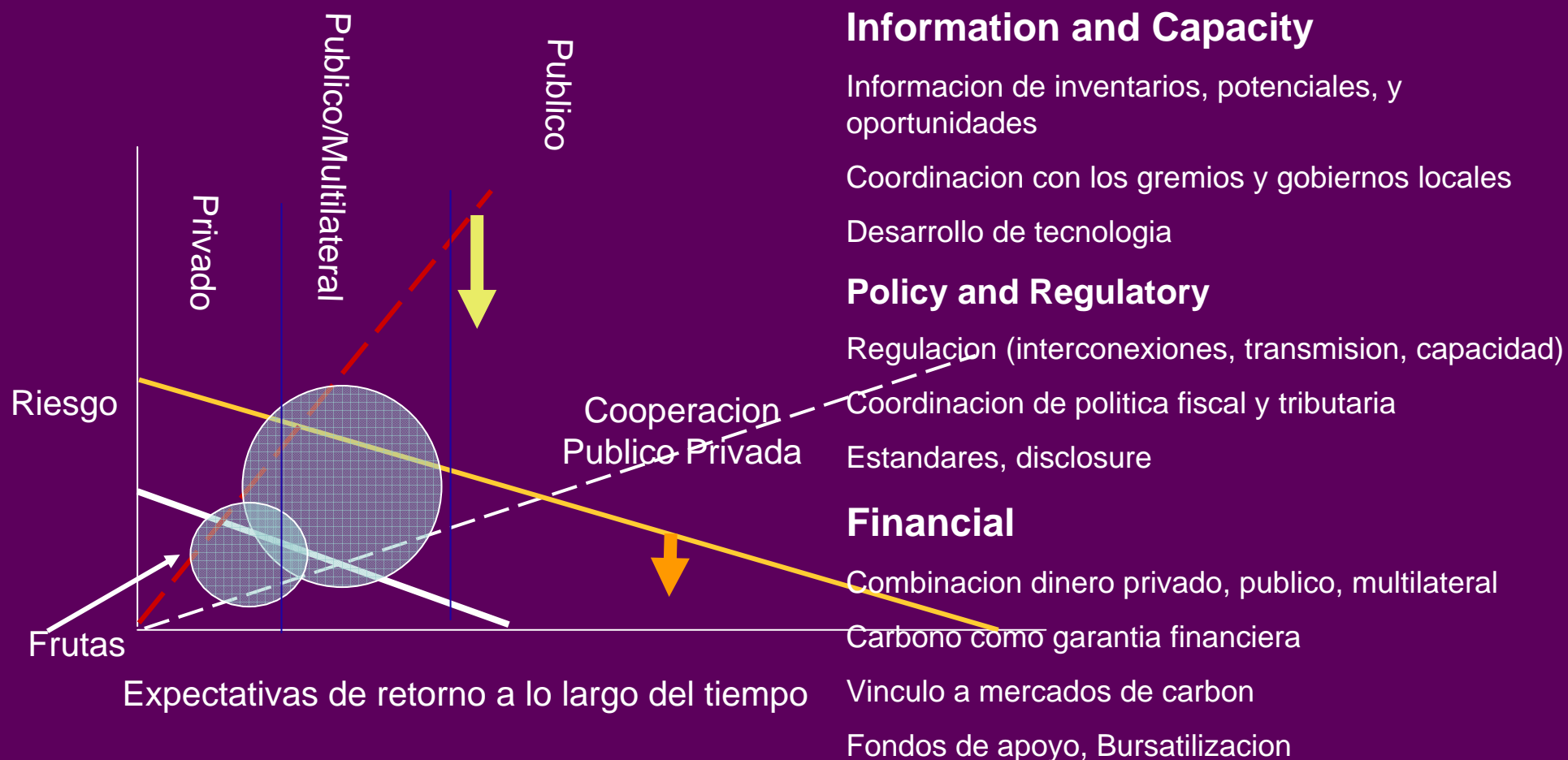
Crucial to expand and take advantage of opportunities to financed adaptation and take advantage of cobenefits (i.e. change our policy environment).



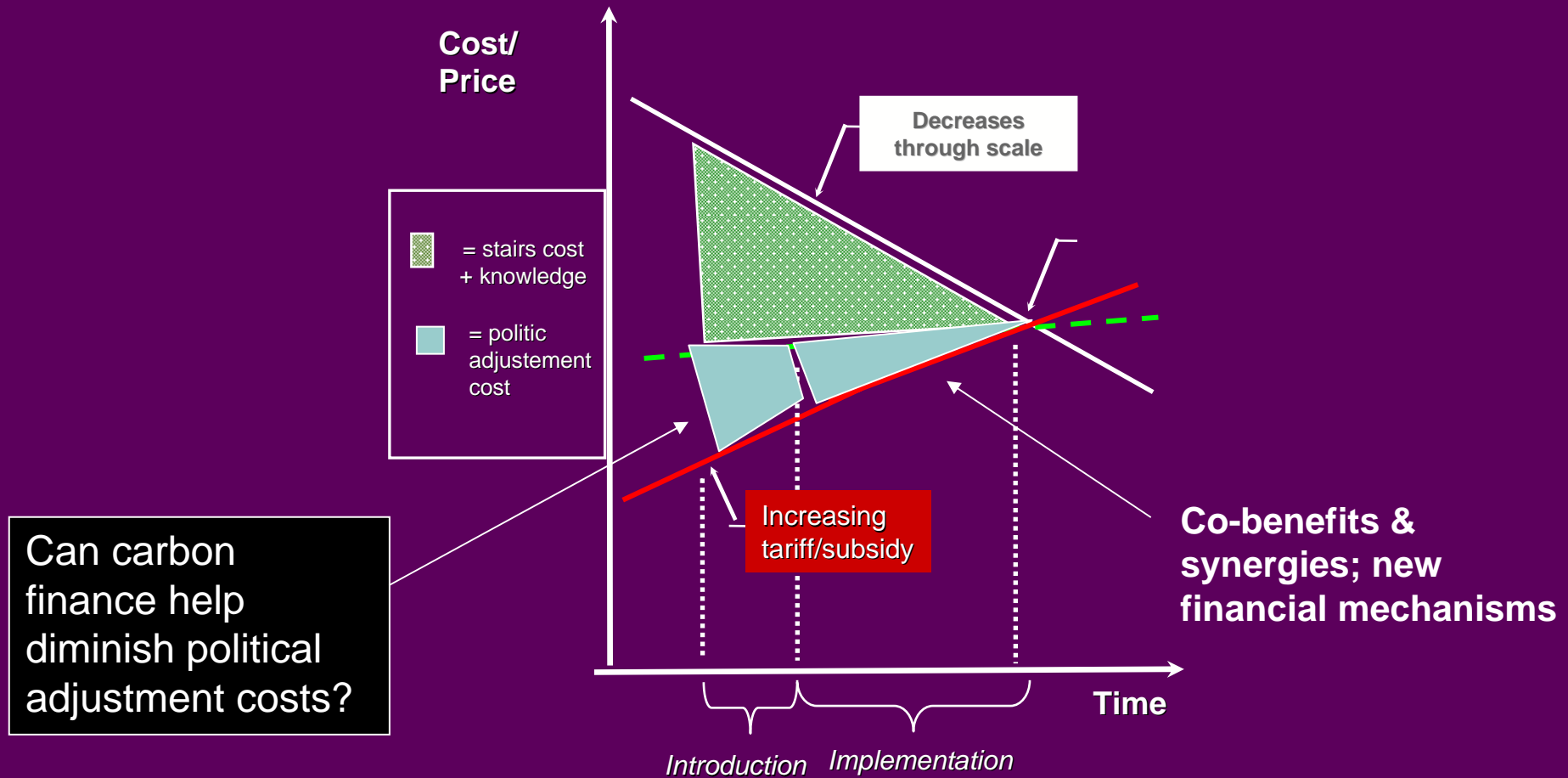
The market on its own will not create sustainable development.

A new public policy generation

CDM expansion is as much a policy and financial issue as an information and capacity building exercise



A new role for Carbon Finance?



How to act? Montreal

Context: Do policies move the baseline?

(Context: Ghana AC standard; EB16,22)

Why is this important?

Countries would have to choose between passing policies or approving CDM projects: a perverse incentive.

But more to the point: Is there a role for government action with climate Change mitigation and CDM in Developing Countries?

What was decided?

Policies are not CDM:

However:

Project activities, under programs, can be single CDM, provided methodological consideration observed.

There is a role for Government action...!

Is Montreal Enough? No

Policies

Governmental Function – General Environment

No CDM possible: not all policies result in CDM project activity

Programs

Governments / Private Parties –

- Specific incentives for policy goal
- Agent(s) involved in coordination, promotion, barrier removal.
- Program playing facilitating role for private, multilateral or GEF finance

Not always CDM possible: not all programs directly generate CDM project activity; however, can always form a single PDD as a single CDM project, including proj.act.

Project Activity

Private Parties / Public Sector

- **In all cases, source of direct emission reductions**
- **Carbon finance operating incentive, complementary role**
- **CERs contractually assigned**

CDM can include single methodology (e.g. in EE projects), or several (e.g. wind, landfill, and small hydro in different areas, but with similar incentives)

Additionality considered not solely at the project level, but rather assessed within program context.

An example...

Policies Energy Sectorial Program 1000MWs New renewable goals 2001
Law Initiative for Renewable Energy 2006

Programs

Incentives?

Interconnection, Transmission and Capacity Incentives, intermittent sources (2001- 6)

- Green fund with GEF support (2003)
- Accelerated depreciation for new projects (2005)
- fossil fuel tax to support green fund (TBD)

Agents?

- Led by Ministry of Energy
- Program playing facilitating role for private, multilateral or GEF finance

Can generate CERs?

Can be presented with a single PDD as a single CDM project.
Would require different methodologies for category
CERs generated by project activities within each categories

Projects

Activities?

Wind (85 MWs wind initially, 105 MWs subsequently)

Non electric applications, etc.

CERs?

Go into the fund for marginal replenishment

Additionality?

In the context of the program (Law explicitly states objectives)

Methodologies assess projects in each category

Mexico's Green Fund

Large-scale renewable energy development project (WB-GEF: US\$70M)

Based on California incentive scheme

Subsidy source, leveraging additional US\$500M in private investment

Competitive, performance-based 5-year subsidy

Rationale: Reduce costs and increase renewable energy value recognition: need for subsidy expected to eventually disappear

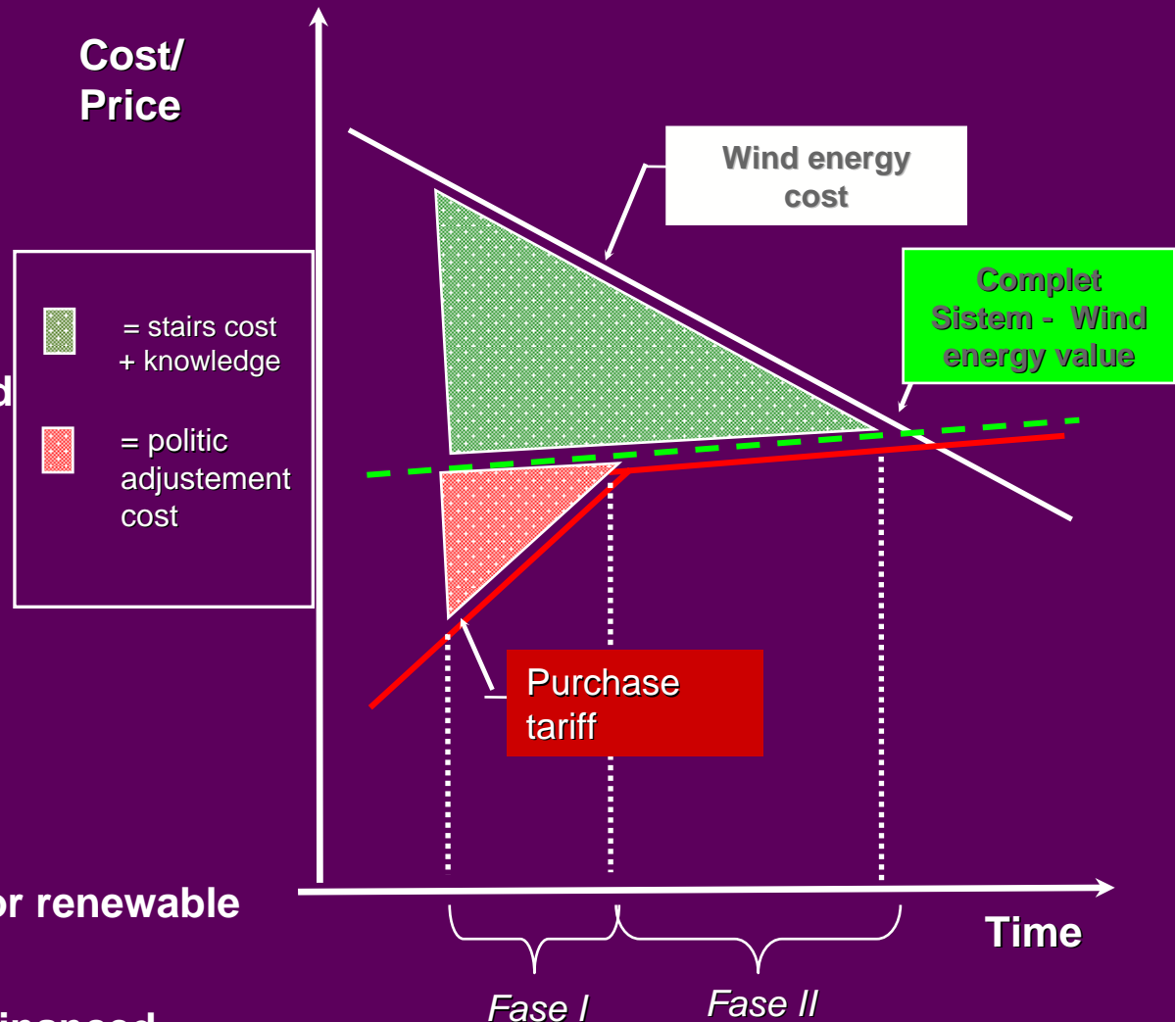
First stage focused on wind; second stage includes other sources

Resulting Carbon finance feed into fund

Status

Project document contemplates support for renewable energy exports.

Currently developing bidding and carbon financed components; expected to run 2006.



Has this approach been successful?

Mexico

1999 – 2 MWs wind, no projects

2001 – 68MWs in projects

2006 – 84 already being built, 400+ already being built

Wouldn't it make sense to start examining how to make sustainable policy goals and combining them with carbon finance to help increase needed investment?

But, NB. Do not stop the small to pursue the large!

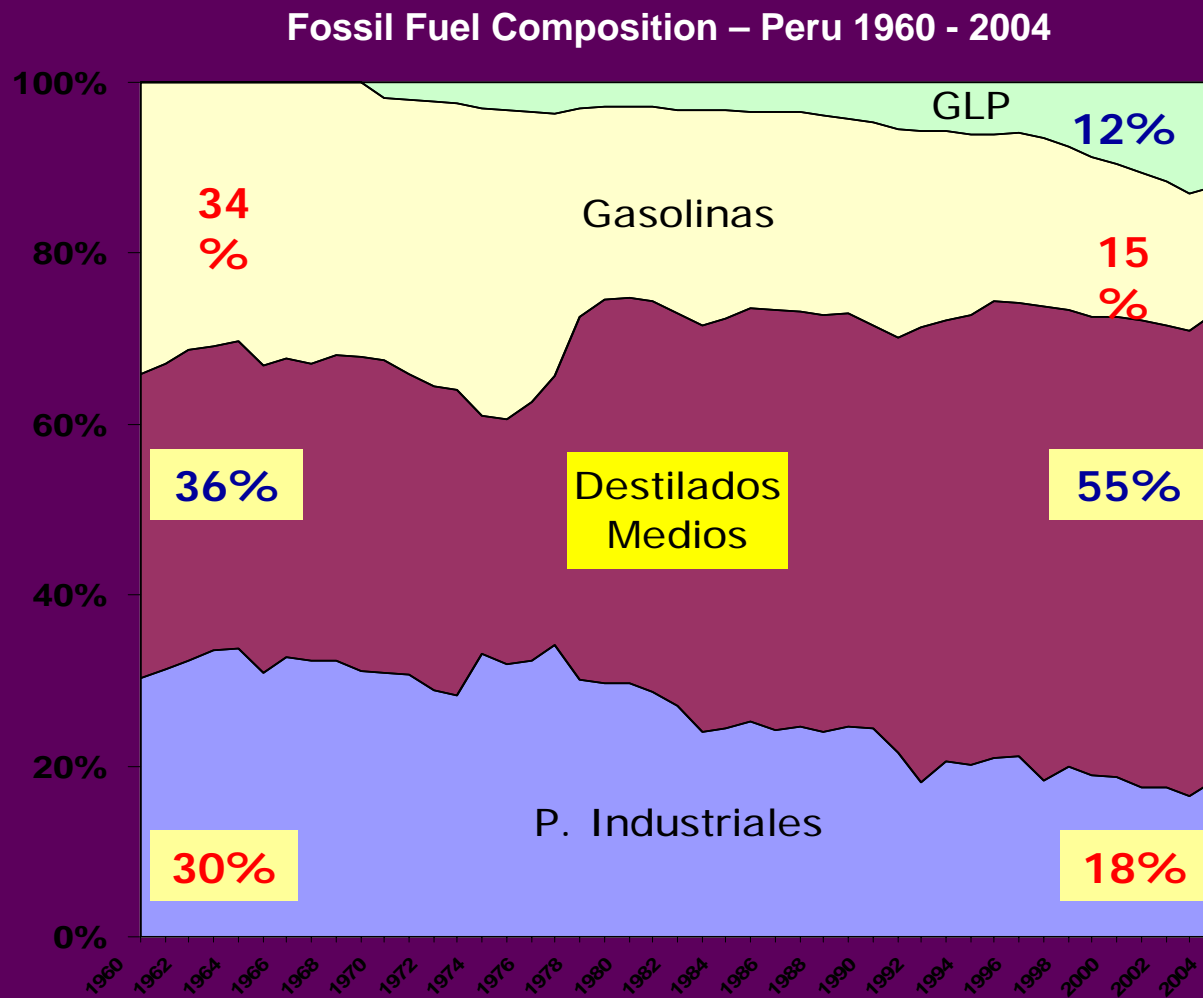
New technologies – Biofuels, Brazil

- A New motorization concept, original from manufacturer, building upon long term Brazilian biofuel experience
- Allows use of hydrated ethanol (E100), gasoline or any blend, automatically adapting to the fuel
- Free consumer choice of fuel
- Vehicular hardware change to control emissions
- Booming sales:
 - 38,000 (2003) to around 400,000 (2004)
 - Already 24% of total car sales
 - Soon will dominate market

An Energy Policy Opportunity

The region's countries tend to subsidize dirtier and unavailable fuels

Could programmatic approaches help phase out subsidies?



A Transition fueled by specific programs

Are sectorial goals worthwhile?

Who would execute them?

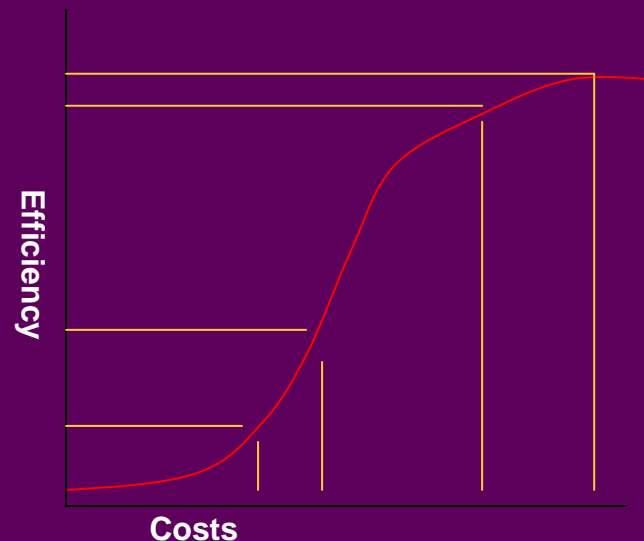
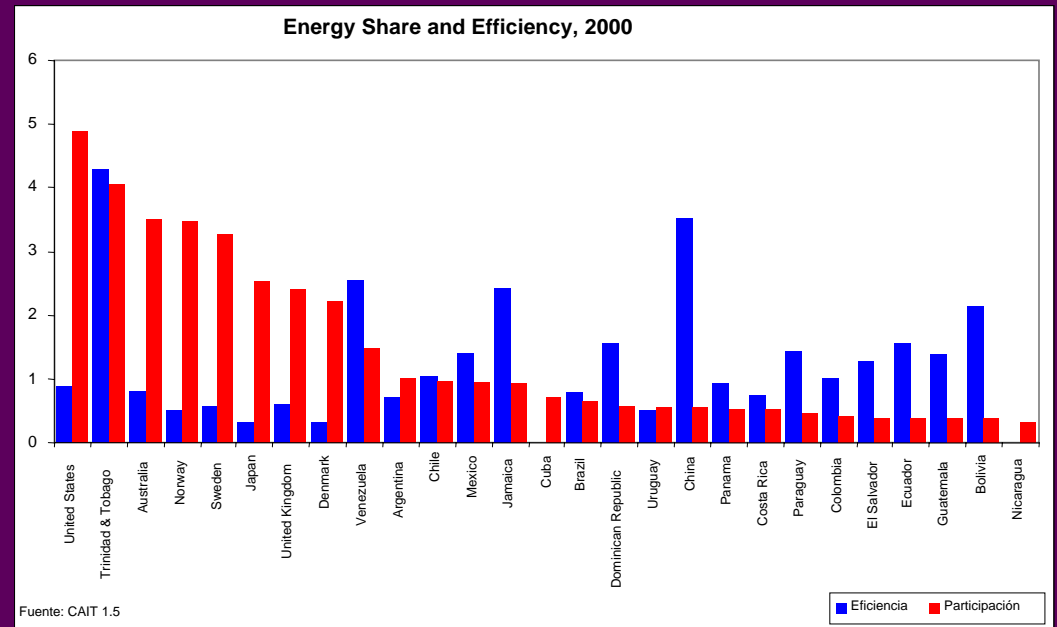
Can the region develop policy matrixes for different income level / economy sizes

Which policy mixes are more effective for specific sectors (energy, waste, transport, forestry)

How to integrate multilateral and private financial packages be integrated with policy and carbon finance?

Where interest diverge but also where do they coincide with annex 1 countries

What is required to insure a favourable Kyoto regime remains post 2012



As efficiency levels increase, it is more costly to make reductions

Differences in relative efficiencies make it worthwhile to engage in trading

GLENEAGLES PROCESS– Complement Carbon Finance

What was the focus? Clarity on fundamental

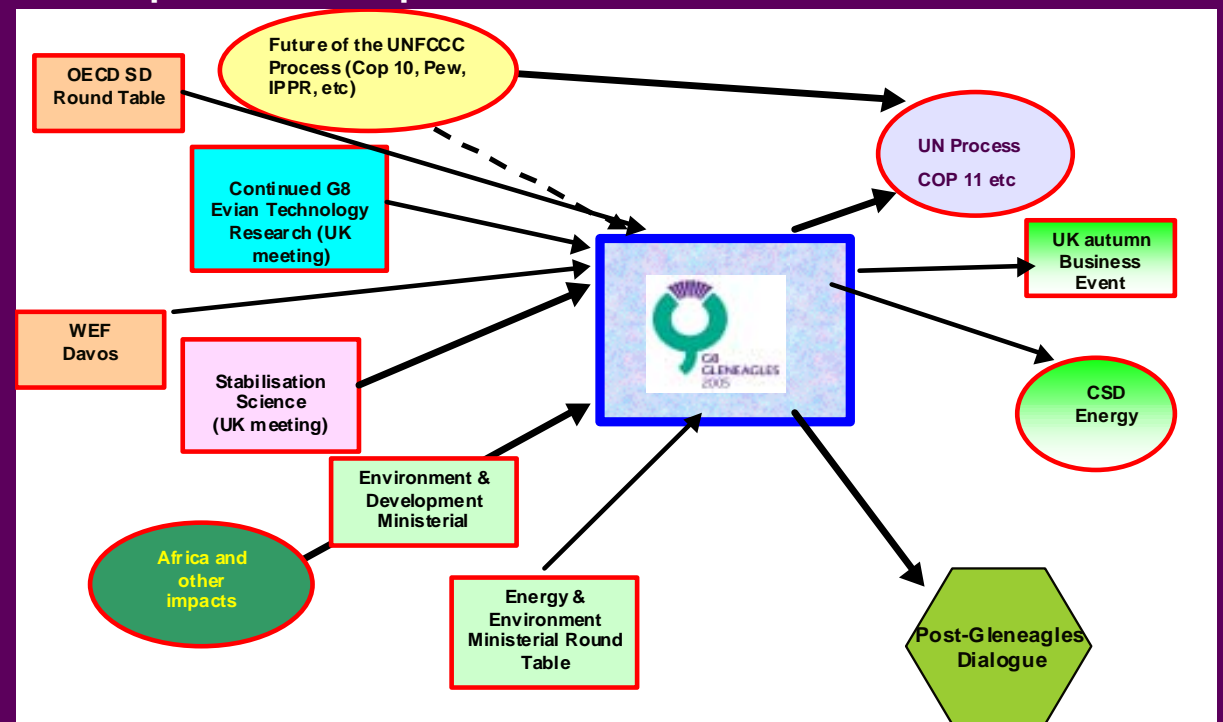
- A statement on the science
 - A package of measures
 - Forward-looking engagement between G8 and the developing world, through global and regional institutions
-not post-2012 architecture or other UNFCCC business

What was achieved? A place on top of the table

- Greater clarity on the science
- Firmer agreement from all G8 on human causes and need for urgency
- Linking climate and development needs
- New global workstreams deploying global institutions to help tech transfer
- Business engagement worldwide
- Setting aside false dichotomy between technology/Kyoto
- A place at the top table

A Plan of Action – Technology and Finance

- to use less energy, and cleaner sources
- Developing countries – G5 statement and the “new paradigm”
- The International Energy Agency and The World Bank with key roles in taking the work forward; regionally, development institutions and banks: role for IDB
- Work will be taken forward through future Presidencies: Russia, Germany, Japan; Mexico has agreed hosting following up, CEPAL (ECLAC) already playing a role.



CLIMATE CHANGE UK G8 PRESIDENCY PROCESS

Regional Action so far

- Preparatory Meetings - Steering Committee (August 15)
- ECLAC regional meeting Mainstreaming Climate Change policies : Towards a Lower Carbon economies (CEPAL, September 13 - 14).
 - opportunities in Public Transport, Waste Management, Lightning, Energy Efficiency, Cogeneration, Fuel switching
 - Acute need to align policy for the long term; long term Climate Regime crucial
- Presentation of Results of the Conference at Iberoamerican network on National Designated Authorities
- Presentation and discussion in Caracas Environmental Ministers Summit.

Current

- IDB consultation of investment framework
- Meeting on Finance and CDM, Mexico City

Next Steps

- Annual IDB Meeting
- WB board presentation
- Spring Wb meeting of financial framework

Where do we go from here?

Carbon Finance has played marginal promotion role in large energy sector decisions

- ❑ Scale: Need to go beyond small project by project basis to large sectoral flexible mechanism in several areas.**
- ❑ Volume: Large scale transactions focusing on introduction of new technologies within sectors**
- ❑ Incentives: Investment Funds, Improved project finance, technology access. Access to large term finance to address long term problem**
- ❑ Complementarity: Strategic partnerships combining new sources of finance, policy frameworks, and carbon finance to achieve goals**
 - ❑ Baseline is not the proposed policy, rather it is the past performance: evaluation of additionality would require examine what have sectors done and what can they do.**
 - ❑ Baseline is not moved by introduction of new policies**

Expansion to other sectors: Cement, Steel, Transport, Forestry.

Elements for an agenda

Countries

Identify opportunities, priorities

Combine carbon finance with policy goals

Engage MFI, Private sector.

Financial Institutions

WB/ IDB / CAF/ Others

Financial Framework

Instruments and diagnostic

Complementarities with CF, CDM (and GEF?)

Mobilizing private sector resources

Engage in country and regional dialogue

Regional institutions as pivots and support

OLADE / CEPAL / others as fit

Can play central role on analyzing macro impacts, policy areas for programmatic action, potential for large scale mitigation, and cobenefits and synergies

IDB / CAF / WB / others as fit

Financing and assessing financial and institutional capacity as well as above

UNEP / UNDP / WB / others as fit

Linkages between mitigation, adaptation and overall development.

Private Parties as developers and policy entrepreneurs

Identify opportunities

Support bundling of finance, policy, technology

What sectors could be in such a Regional Agenda?

- Increased Efficiency in GHG sectors
- Shifts in resource base / fuel mix
- Gas introduction assessments
- Renewable energy
- Transport and urban corridors
- Housing and built environment
- Solid and water waste management; landfills
- Rural electrification, access to energy
- Forestry? An urgent need

Summing up

❑ **CDM can operate as a catalyzer for policy and regulatory action, and this in turn, for further investment:**

- 1. Incentive for policy coordination towards lower carbon deployment**
- 2. Related to access to other finance sources (linkages with EU – ETS, Gleneagles / World Bank dialogue)**
- 3. An expanded view of project boundaries, baselines and goals; can operate either within current rules or an improved CDM**

❑ **This implies**

- 1. First Things first: a significantly enhanced capacity within the Executive Board**
- 2. Last but not least: a new role for the MFI, regional banks and research institutions:**
 - **How to link carbon finance with the underlying project finance, and the expansion of project finance**
 - **What is the performance of a sector and the potential, effective impact of policies.**
 - **What is additional in that context**

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