



FOOD SECURITY AND CLIMATE CHANGE: SOUTHERN PERSPECTIVES

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RTOACC

Primary and overriding objective

Achieving climate change-adapted and sustainable economic and social development of and poverty reduction in developing countries

The key question then is HOW?

Ecological parameters:


- Forest and land biodiversity and resource loss
- Marine biodiversity and resource loss
- Water access-related stress

Social parameters:

- Population growth at home
- Cultural shifts and societal anomie
- Population shifts (internal and international migration)

Economic parameters:

- Income disparity (domestic and international)
- Economic opportunity and resource constraints due to existing economic structures (domestic and global) – e.g. trade, agro-industrial structure, employment



Cross-cutting: Climate change impact adaptation and disaster management and rehabilitation requirements

Where developing countries are coming from on climate change and development ...

The development gap between developed and developing countries still exists

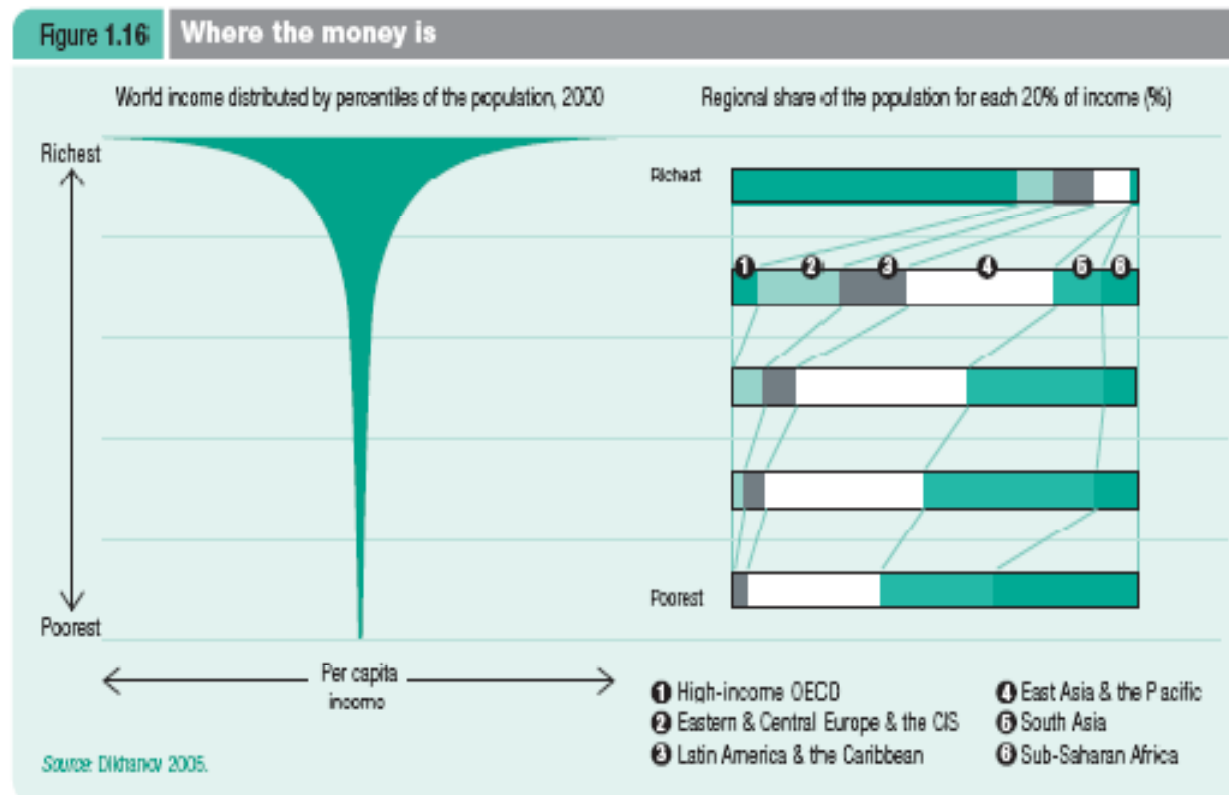
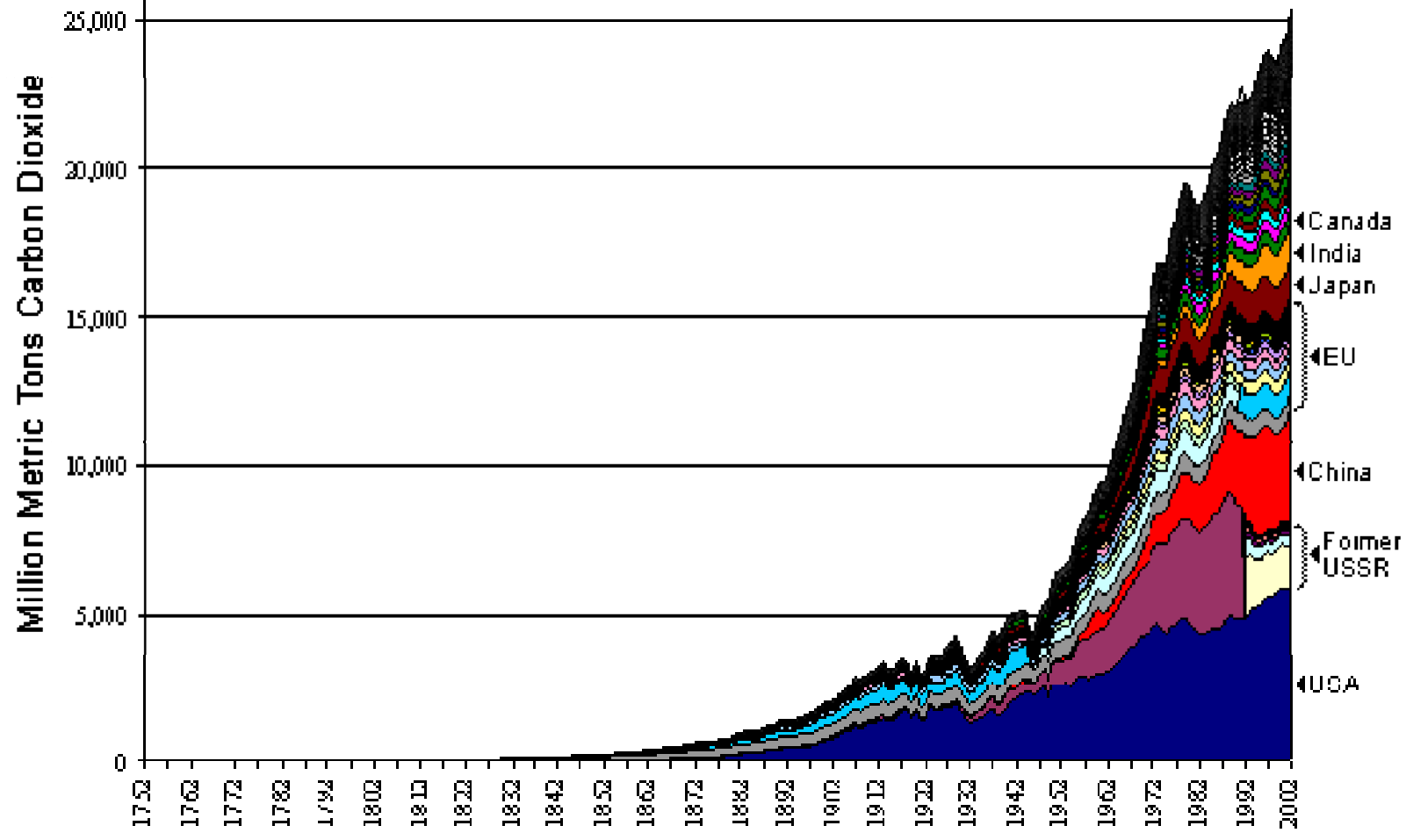
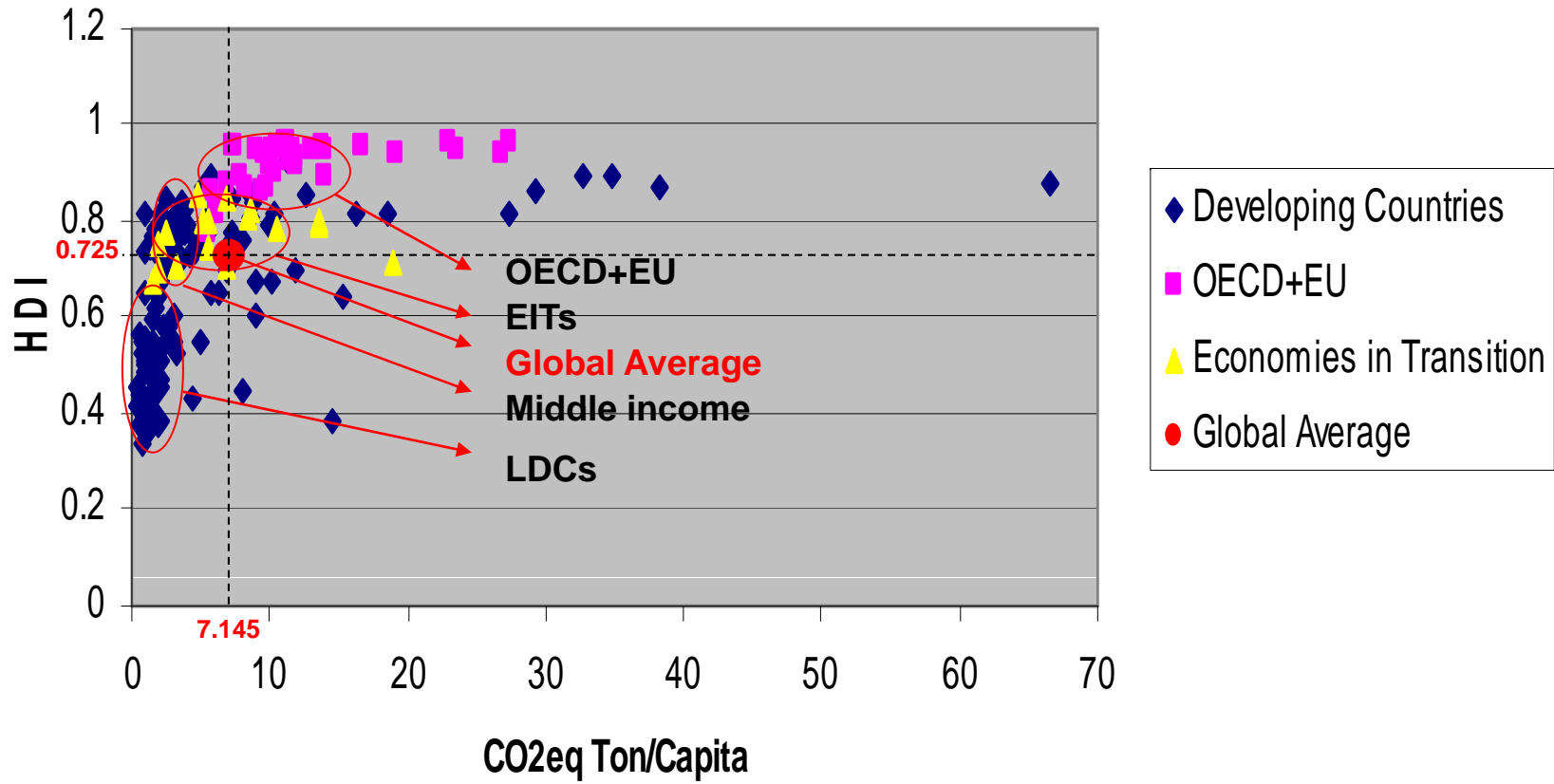


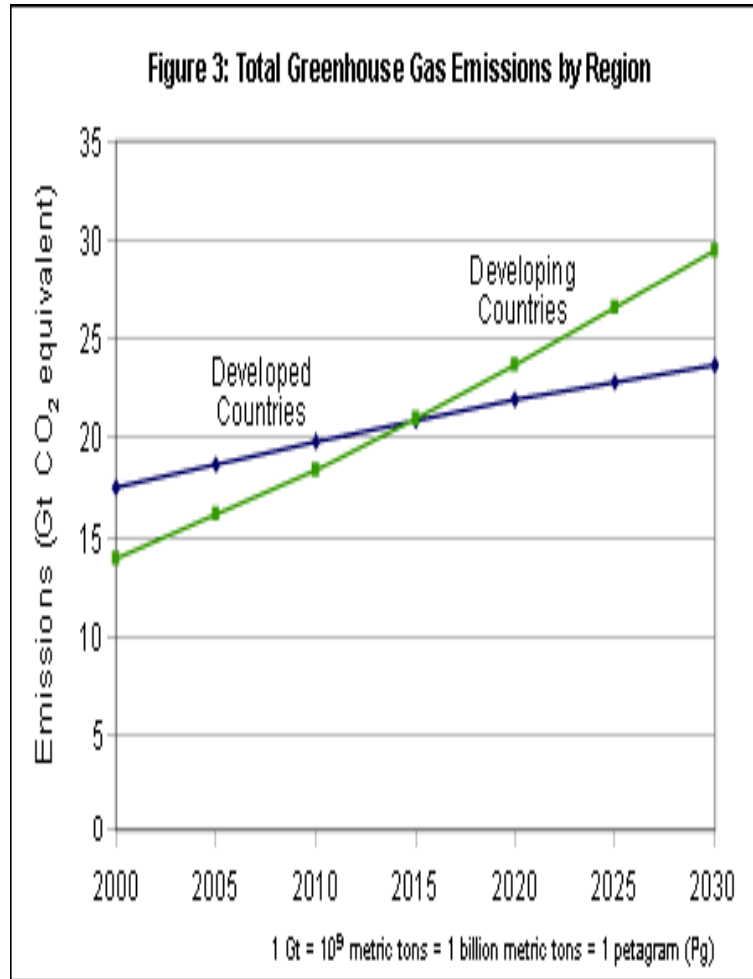
Figure 2: Global CO2 Emissions from Fossil Fuel Burning, Cement Manufacture, and Gas Flaring: 1751-2002



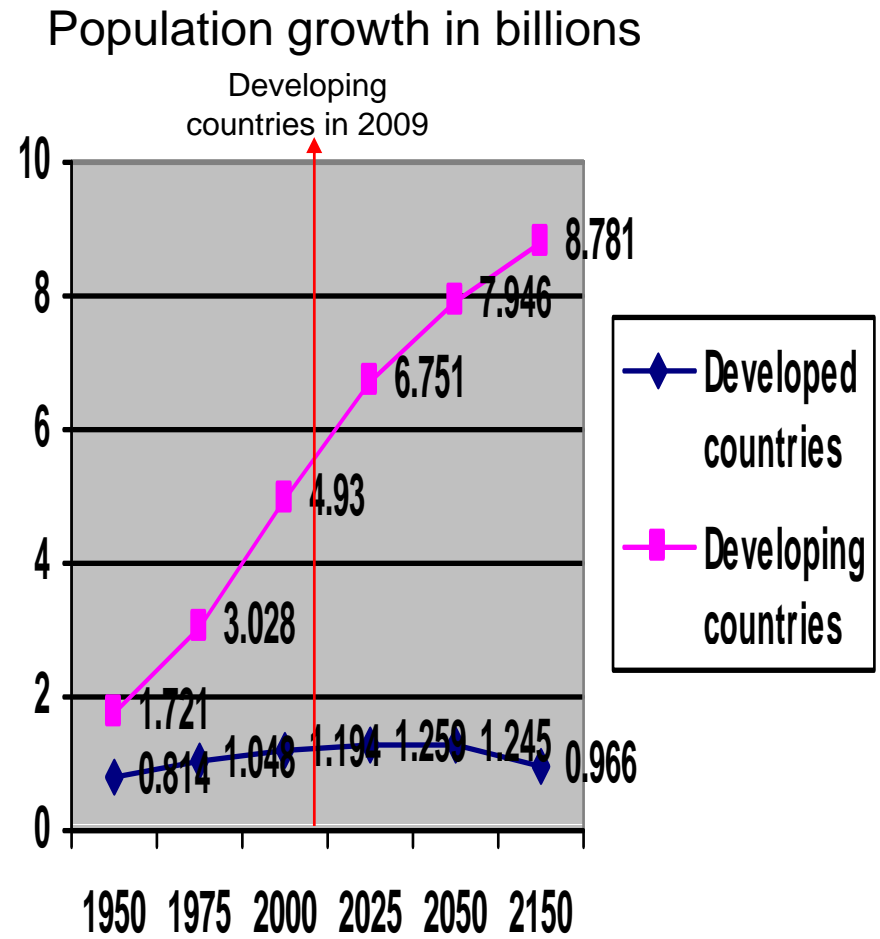
<http://www.epa.gov/climatechange/emissions/globalghg.html>

Global HDI-CO2eq Ton/Capita





<http://www.epa.gov/climatechange/emissions/globalghg.html>



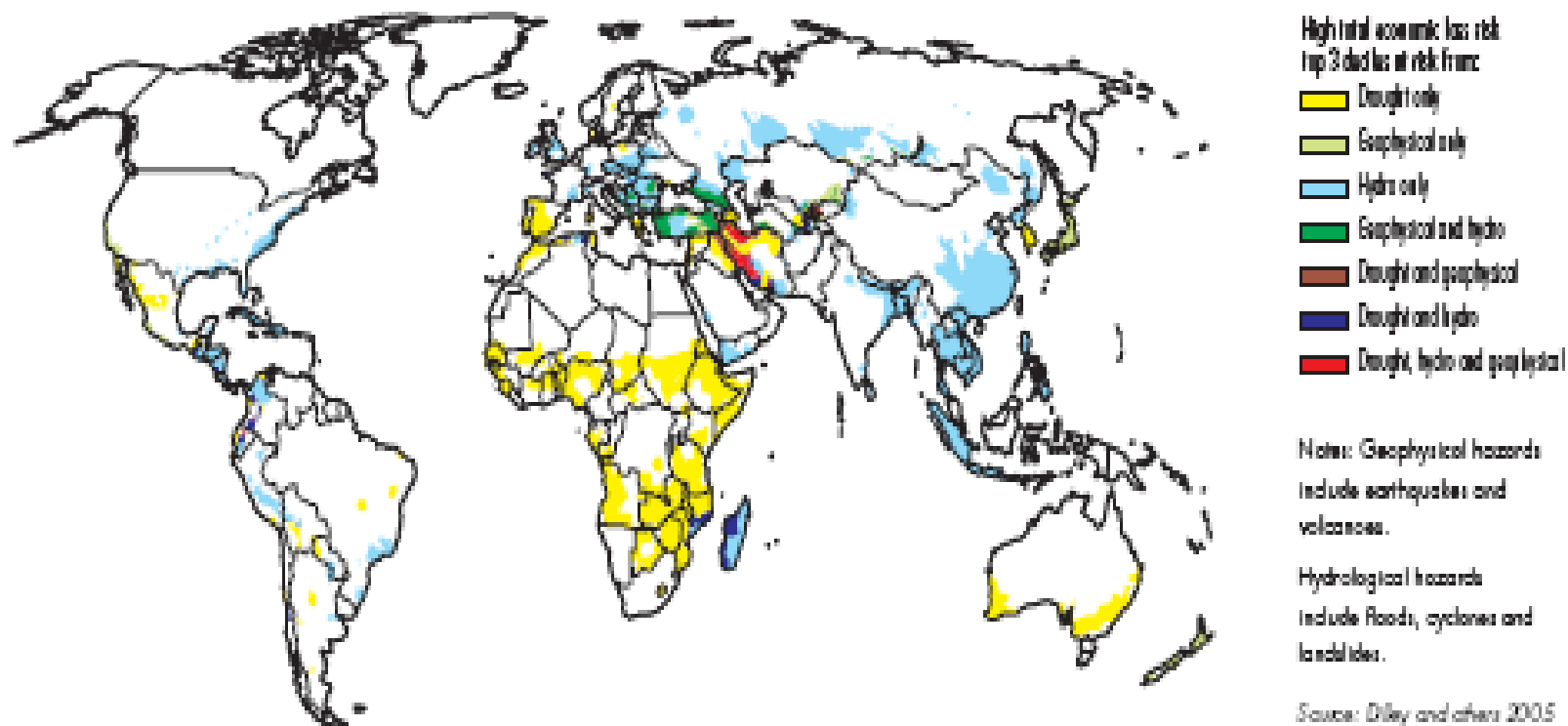
<http://esa.un.org/unpp/p2k0data.asp>

Projected regional impacts in developing country regions (IPCC AR4, 2007)

Africa	<ul style="list-style-type: none"> • By 2020, between 75 and 250 million of people are projected to be exposed to increased water stress due to climate change; • By 2020, in some countries, yields from rain-fed agriculture could be reduced by up to 50%. Agricultural production, including access to food, in many African countries is projected to be severely compromised. This would further adversely affect food security and exacerbate malnutrition; • Towards the end of the 21st century, projected sea-level rise will affect low-lying coastal areas with large populations. The cost of adaptation could amount to at least 5-10% of Gross Domestic Product (GDP); • By 2080, an increase of 5-8% of arid and semi-arid land in Africa is projected under a range of climate scenarios (TS).
Asia	<ul style="list-style-type: none"> • By the 2050s, freshwater availability in Central, South, East and South-East Asia, particularly in large river basins, is projected to decrease; • Coastal areas, especially heavily-populated megadelta regions in South, East and South-East Asia, will be at greatest risk due to increased flooding from the sea and, in some megadeltas, flooding from the rivers; • Climate change is projected to compound the pressures on natural resources and the environment, associated with rapid urbanization, industrialization and economic development; • Endemic morbidity and mortality due to diarrhoeal disease primarily associated with floods and droughts are expected to rise in East, South and South-East Asia due to projected changes in the hydrological cycle.
Latin America	<ul style="list-style-type: none"> • By mid century, increases in temperature and associated decreases in soil water are projected to lead to gradual replacement of tropical forest by savanna in eastern Amazonia. Semi-arid vegetation will tend to be replaced by arid-land vegetation. • There is a risk of significant biodiversity loss through species extinction in many areas of tropical Latin America; • Productivity of some important crops is projected to decrease and livestock productivity to decline, with adverse consequences for food security. In temperate zones soybean yields are projected to increase. Overall, the number of people at risk of hunger is projected to increase (TS; <i>medium confidence</i>). • Changes in precipitation patterns and the disappearance of glaciers are projected to significantly affect water availability for human consumption, agriculture and energy generation.

... especially too much or too little water ...

Figure 7.12 Highest risk hot spots by natural hazard type

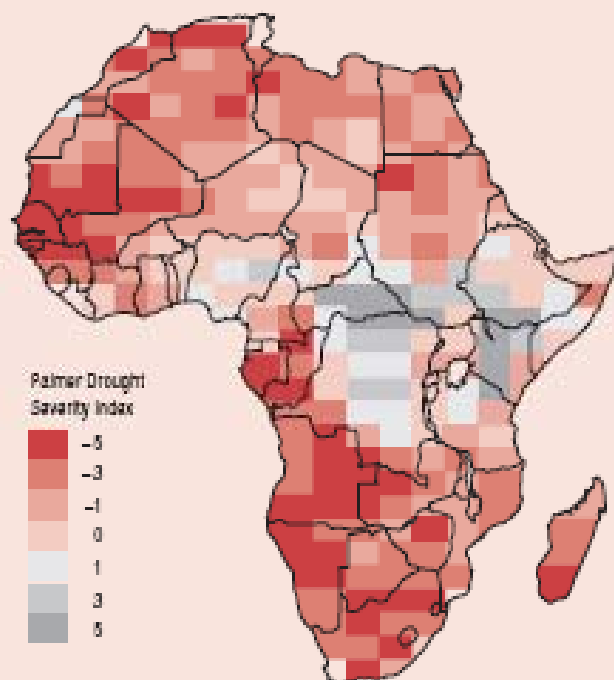


... as in Africa ...

Map 2.1

Drying out: Africa's drought area is expanding

Drought severity under IPCC scenario A2 (change relative to 2000 by 2040)



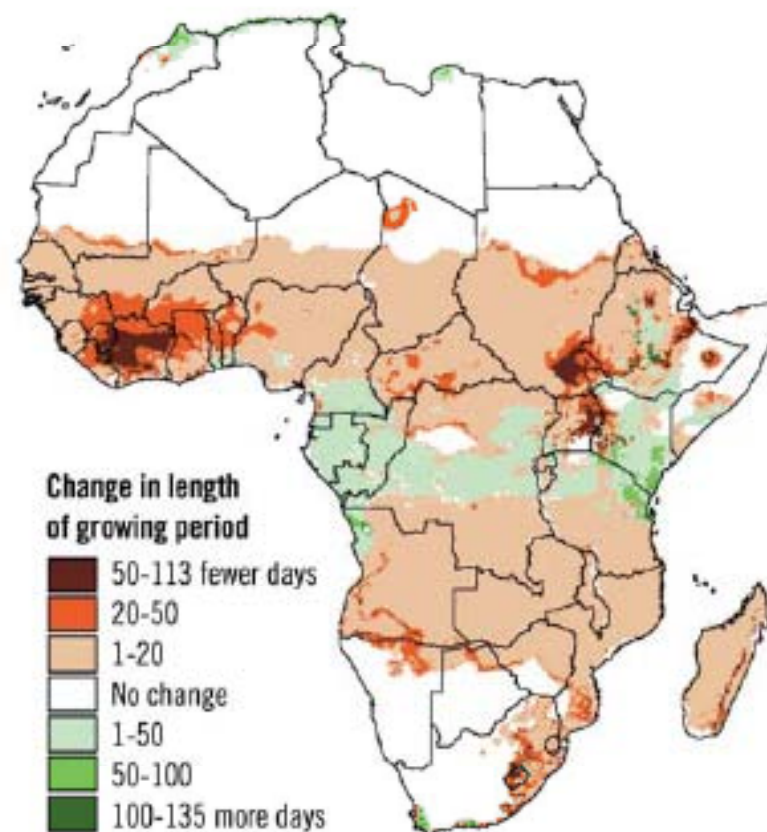
Note: The boundaries shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

IPCC scenarios describe plausible future patterns of population growth, economic growth, technological change and associated CO₂ emissions. The A1 scenario assumes rapid economic and population growth combined with reliance on fossil fuels (A1F1), non-fossil energy (A1T) or a combination (A1B). The A2 scenario, used here, assumes lower economic growth, less globalization and continued high population growth. A negative change in the Palmer Drought Severity Index, calculated based on precipitation and evaporation projections, implies more severe droughts.

Source: Nat Office 2006.

FIGURE 1.2 CLIMATE CHANGE AND FOOD SECURITY

Changes in Projected Growing Season, 2000-2050

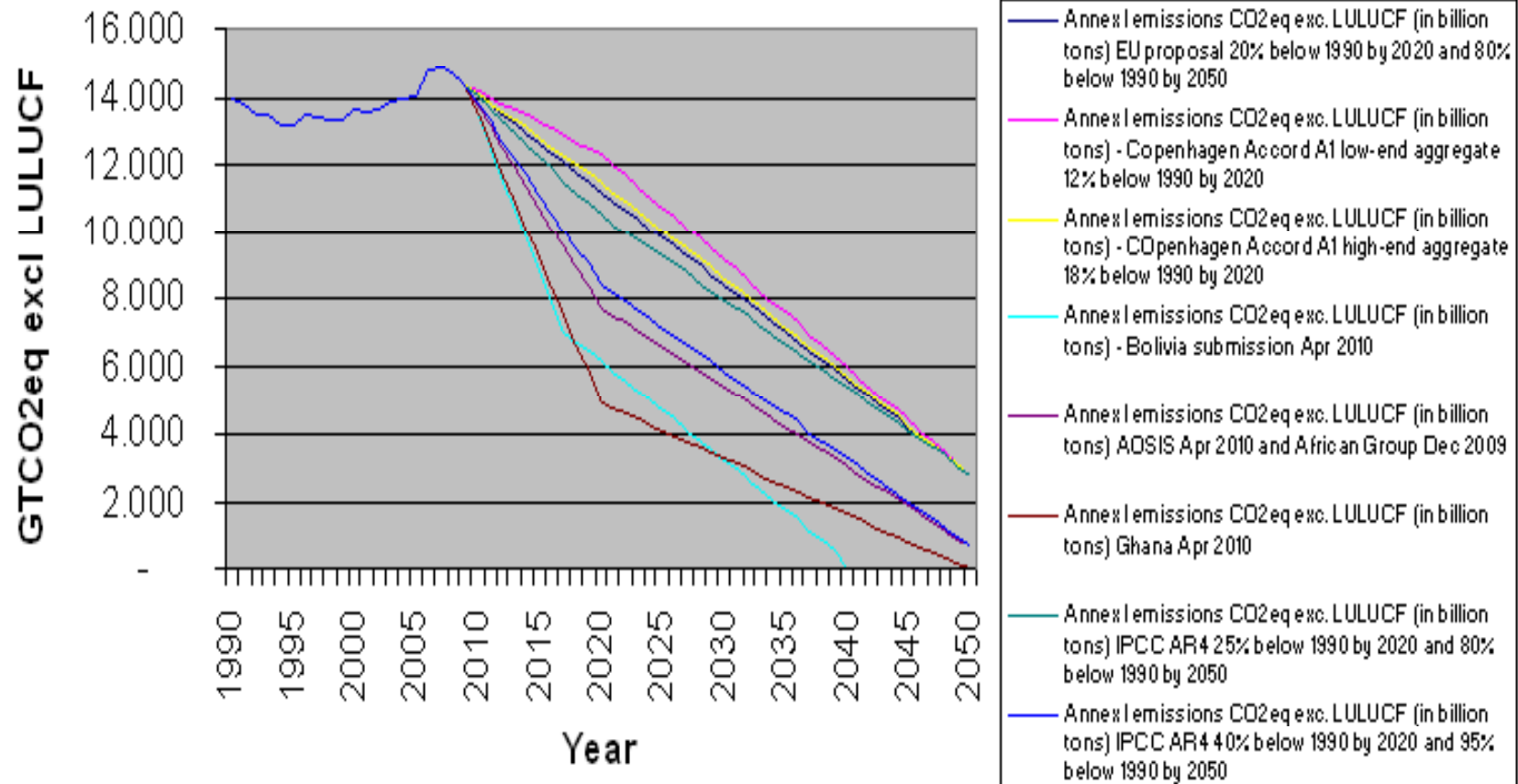


Source: Thornton et al. 2002:89

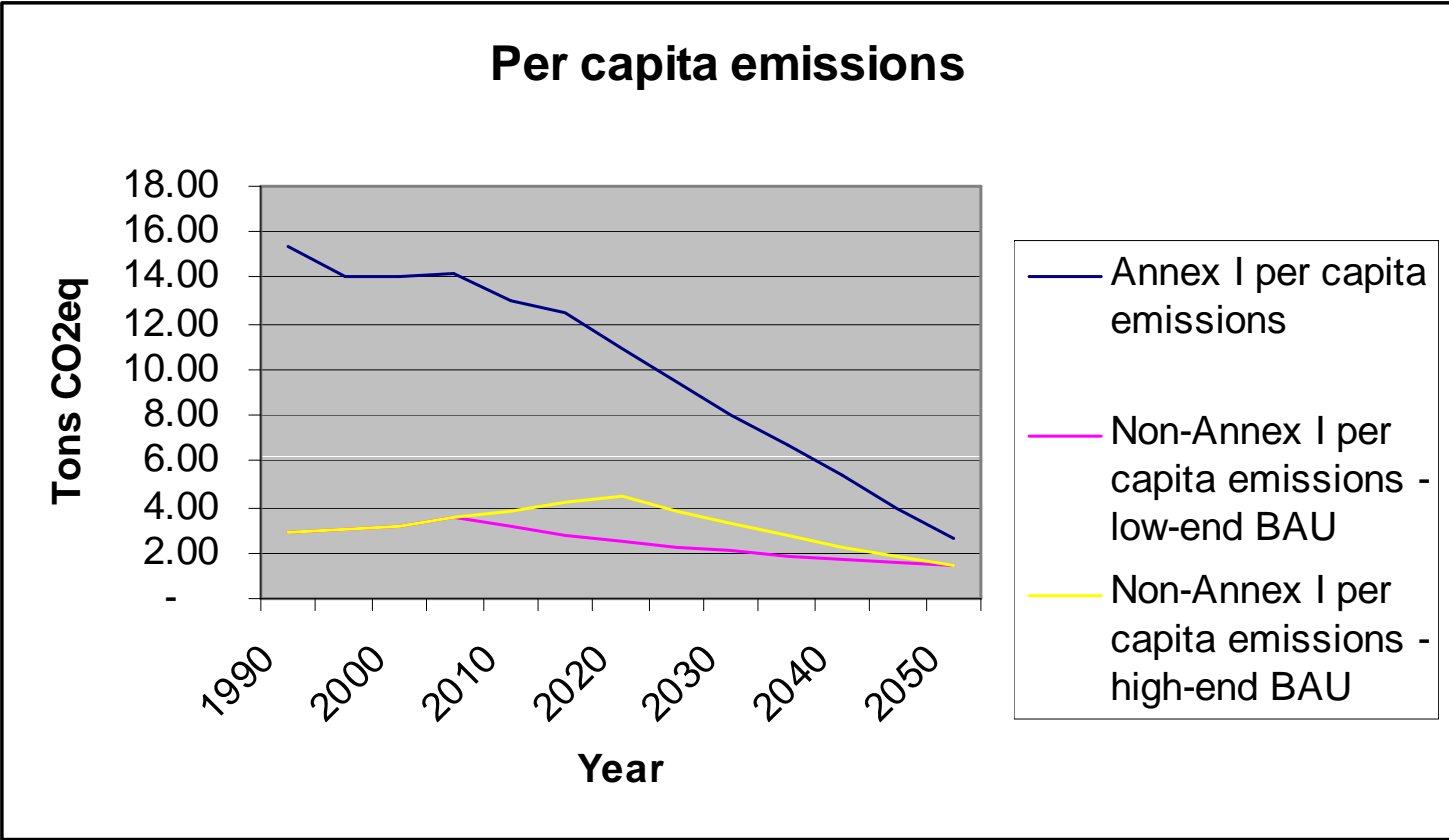
How do we share the remaining global atmospheric carbon resource so that we have food for all?



Proposed Emission Reductions for Annex I



Implications on per capita emissions



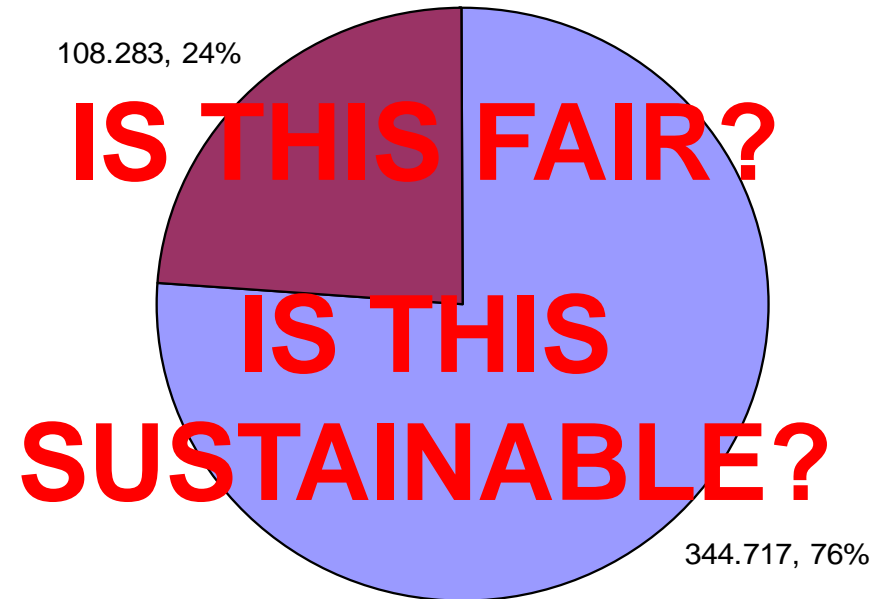
The carbon sharing implications of developed country proposals on emission cuts

Item	Annex I annual emissions	Non-Annex I annual emissions	World annual emissions
1990 emissions w/o LULUCF (all gases CO ₂ eq)	18 billion tons - 60% of global total = 15.3 tons per capita emissions	11.70 billion tons - 40% of global total = 2.9 tons per capita emissions	29.70 billion tons = 5.61 tons per capita emissions
2050 emissions based on EU proposal – global cut of 50% below 1990 by 2050, with 80% Annex 1 cut below 1990 by 2050	Annex I – 80% cut below 1990 3.6 billion tons emissions by 2050 (80% below 1990) = 2.83 tons per capita emissions (81.50% below 1990 per capita) Population-Proportional share: 2.07 billion tons Over-use: 1.53 billion tons (74% above proportional share)	Non-Annex I – residual cut 11.25 billion tons emissions by 2050 (4% below 1990) = 1.43 tons per capita emissions (51% below 1990 per capita) Population-Proportional share: 12.78 billion tons Under-use: 1.53 billion tons (12% below proportional share)	Annual global emissions by 2050 14.85 billion tons emissions by 2050 = 1.62 tons per capita emission (71.12% below 1990 per capita) → of which: A1 = 3.6 billion tons (24.24%) NA1 = 11.25 billion tons (75.76%)

Inequitable sharing; non-reflection of historical responsibility



Sharing of 2010-2050 Carbon Budget Pie in Billion tons CO₂eq



- 2010-2050 A1 allocated Cumulative emissions
- NA1 2010-2050 implied allocated cumulative emissions



What role for carbon trading? → issue not yet settled, especially in context of:

- uncertainty over 2nd Kyoto Protocol commitment period (e.g. CDM/JI continuation);
- uncertain nature of carbon basis of emission trade and use of markets;
- uncertainty over equity aspect of carbon offsets as basis for carbon trade

Global goal of 50% below 1990 by 2050 with A1 80% below 1990 by 2050						
A1 allowed annual emissions	3.598		Per capita	2.6742137	% below 1990 per capita	83%
NA1 allowed annual emissions	11.249		Per capita	1.4413412	% below 1990 per capita	49%

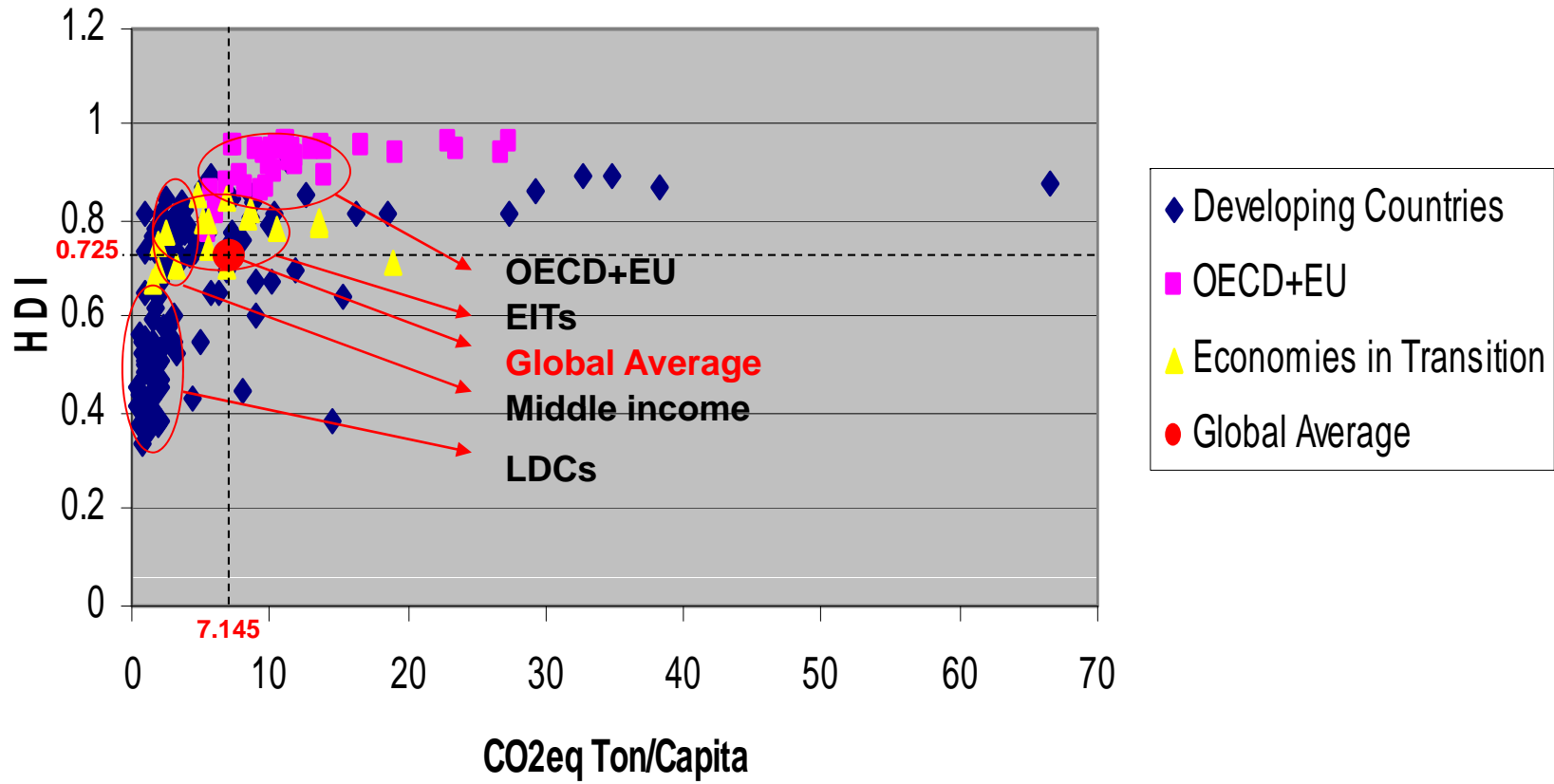
Still 50-50 chance of exceeding 2C by 2050

-3.5C in Africa; 3C in Asia and Latin America

-Insecurity – ecological, food, energy, social, political, economic

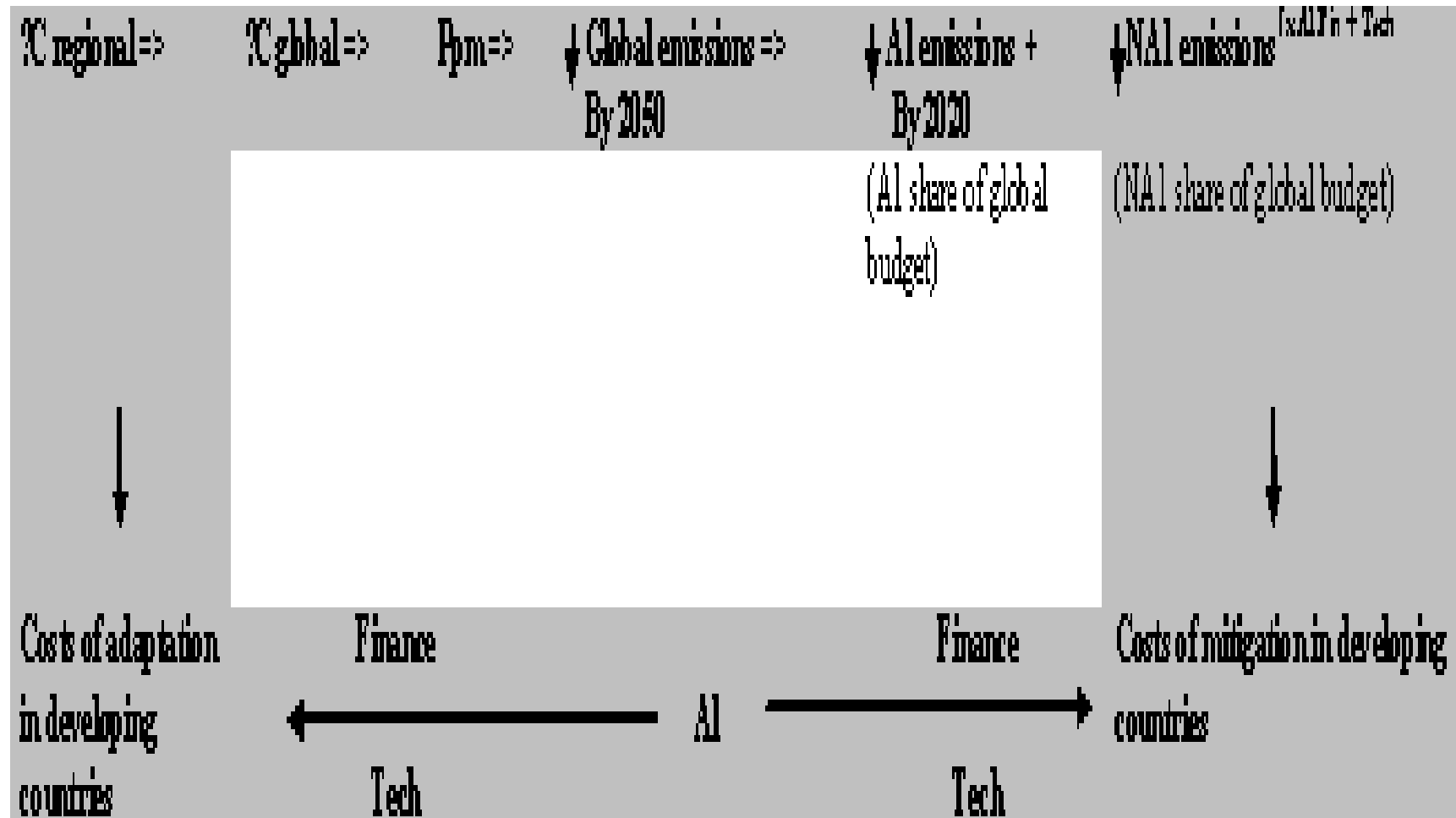


Global HDI-CO2eq Ton/Capita



Conceptual Landing Zone

Equity in Climate Change Responses



Climate Imperatives – Developing Countries

For developing countries, achieving sustainable development is the best way to be able to contribute to global action on climate change → this means focusing on:

- **low-carbon sustainable development** pathways to de-link emissions growth from industrialization (NAMAs); and
- prioritizing **adaptation** that helps bring about mitigation consistent with sustainable development objective (NAPAs)
- **South-South technical assistance, cooperation and information exchange** on the development of climate-adapted national development plans
- **political South-South cooperation in multilateral climate policy negotiations and forums** to consistently highlight equity, historical responsibility and common but differentiated responsibility and respective capabilities as fundamental principles for global climate action



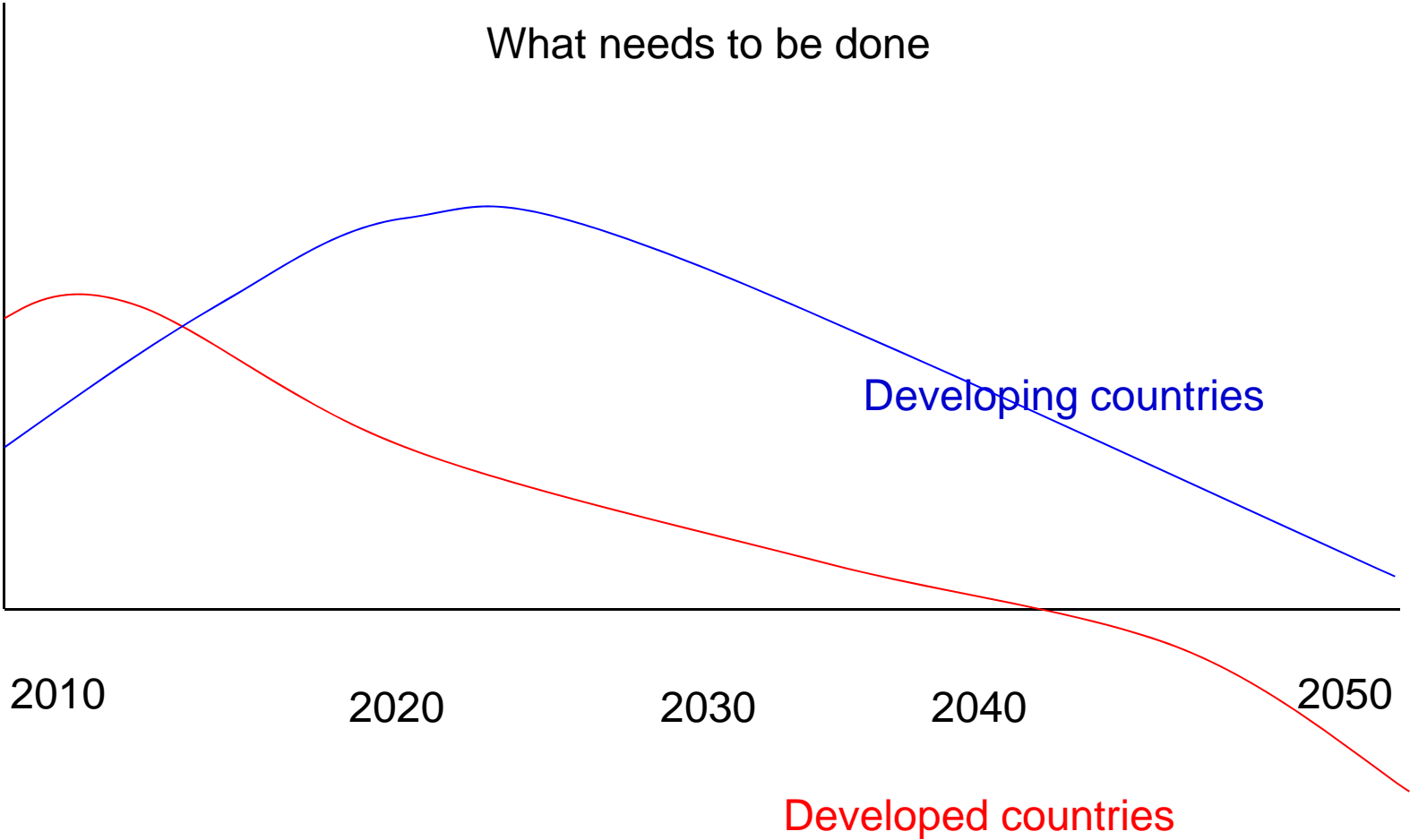
Climate Imperatives – Developed Countries

Providing **additional carbon space** through rapid and deep emissions cuts in developed countries in the mid-term (>50% below 1990 by 2020; >100% below 1990 by 2050) → long-term goal for mitigation should be based on sound science, and consider the economic and technological feasibility, equitable sharing of carbon space

-Compliance with UNFCCC to **provide finance and technology** to support developing countries' mitigation and adaptation actions (NAMAs and NAPAs) to shift to low-carbon pathways so as to lower the increase of developing countries' emissions consistent with sustainable development objectives

-Restructuring of global economic architecture – including on trade policy, finance policy, development cooperation – to provide developing countries with greater development policy space, flexibility, and support

What needs to be done



Policy Foundation - UNFCCC

Art. 4.7 – The balance of UNFCCC commitments

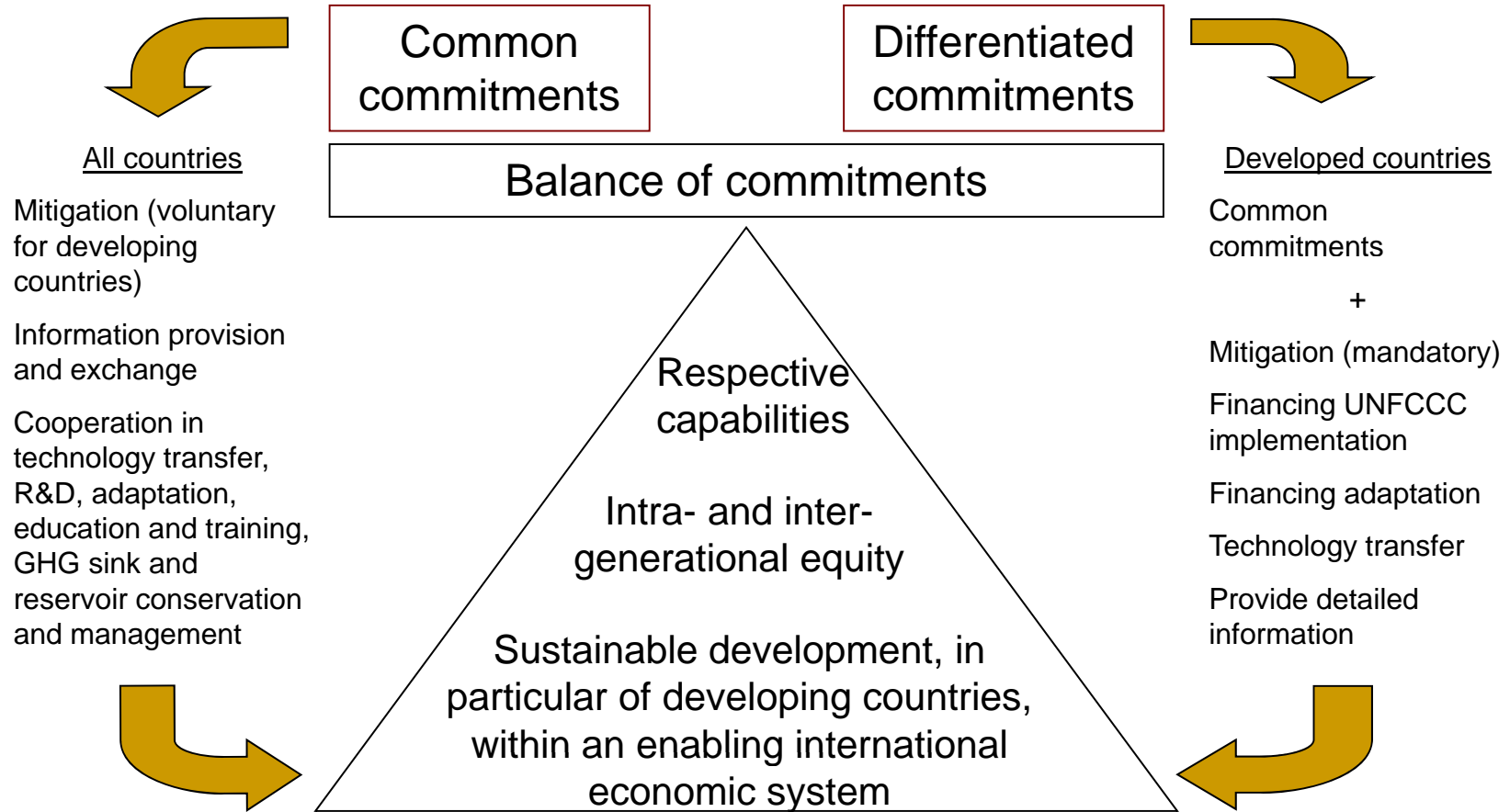
“The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology

and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties”

Extent of implementation by developing countries of their common Art. 4.1 commitments will depend on implementation by developed countries of their differentiated Art. 4.3, 4.4, and 4.5 commitments.



... The balance in the UNFCCC ...



The Landing Zone for North-South Cooperation on Climate Change

In **mitigation**, the understanding in Bali should be maintained. (a) In the AWG-KP, Annex I parties shall make new binding medium-term commitments (to 2020 or 2017) in an aggregate level that is in line with what science requires, and in individual national commitments in the second commitment period in the KP. 2nd period of the KP. (b) In the AWG-LCA, Annex I parties that are not party to the KP shall make a mitigation commitment of comparable effort. (c) In the AWG-LCA, non Annex I parties shall agree to undertake nationally appropriate mitigation actions enabled by finance and technology that measurable, reportable and vulnerable.

Adaptation actions should be supported at all levels, across different economic and social sectors and ecosystems, including through strengthening national capacities, building resilience of socio-economic and ecological systems, enhancing disaster risk reduction, and addressing damage and loss. This should be done through adequate means of implementation, including technology transfer and long-term, scaled up, adequate, new, additional to ODA commitments and predictable non-debt creating finance;

On **finance**, a financial mechanism of the Convention shall be operationalised. Adequate finance must be arranged, through a Fund in the Convention with democratic governance under the Conference of Parties, and with adequate funds for mitigation, adaptation and capacity building. The funds have to be additional, sourced mainly from the public sector or arranged by the public sector, and non-debt creating for developing countries.

An effective **technology** mechanism shall be set up under the COP, with policy making authority, and address key issues with the aim of transferring climate-related technologies to developing countries at affordable cost, including the development of endogenous technologies in developing countries, the issue of IPRs, appropriate R and D models, and removing obstacles to the development and transfer of technology.

On **shared vision**, a comprehensive and integrated approach shall be taken that integrates the four building blocks. Any long-term goal such as in limiting temperature rise or global emission reduction must be made in the context of an equity framework for the mitigation efforts of developed and developing countries, and specific commitments by developed countries to provide finance and technology for developing countries to enable and support their efforts. This framework shall be based on the principles of equity and CDR and recognise and operationalise historical responsibility, and on equity in sharing atmospheric space.

Thank you

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