

CLIMATE CHANGE 2014

Mitigation of Climate Change

Luis Gomez-Echeverri

Chapter 16

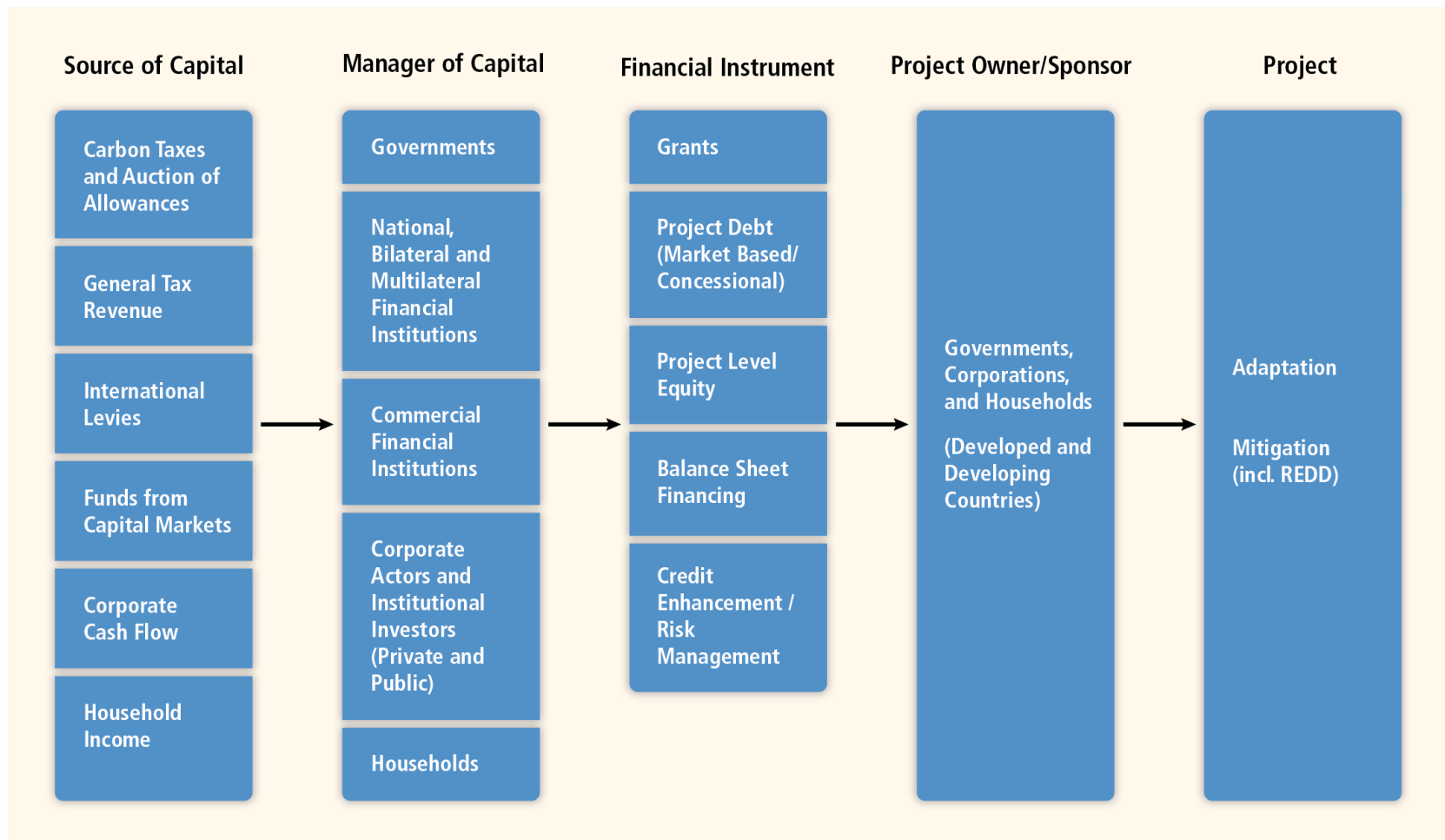
Introduction & Caveat: Investment & Finance (Chapter 16)

For the first time, an assessment report by the Intergovernmental Panel on Climate Change (IPCC) contains a chapter dedicated to investment and finance.

Scientific literature on investment and finance to address climate change is still very limited and knowledge gaps are substantial; there are no agreed definitions for climate investment and climate finance.

Quantitative data are limited, relate to different concepts, and are incomplete. Accounting systems are highly imperfect.

Climate Finance: Overview From Source to Project



There is no widely agreed definition of what constitutes 'climate finance'.

- Total climate finance: about USD 343 to 385 billion per year.
- Around 95% goes to mitigation.
- Public climate finance to developing countries: USD 35 to 49 billion per year.
- Private climate finance flowing to developing countries: USD 10 to 72 billion per year, including foreign direct investment as equity and loans in the range of USD 10 to 37 billion.

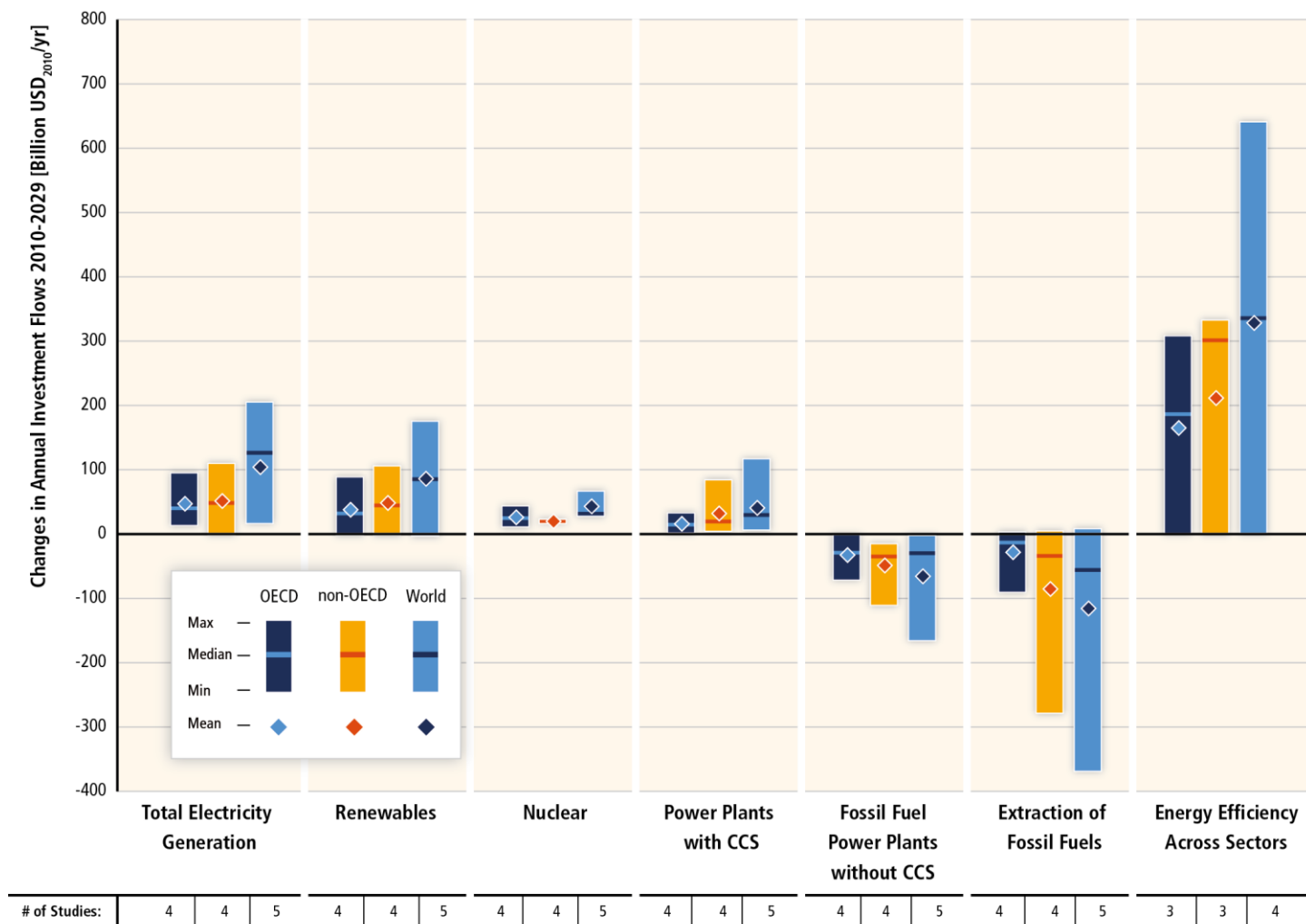
Key Results on Investment and Finance (Chapter 16) (I)

- **Resources to address climate change need to be scaled up considerably over the next few decades both in developed and developing countries.** Increased financial support by developed countries for mitigation (and adaptation) measures in developing countries will be needed to stimulate the increased investment.
- **Public revenues can be raised by collecting carbon taxes and by auctioning carbon allowances (*high confidence*).** Putting a price on greenhouse gas (GHG) emissions, through a carbon tax or emissions trading, alters the rate of return on high- and low-carbon investments. ... Reducing fossil fuel subsidies would lower emissions and release public funds for other purposes [16.2.3].

Key Results on Investment and Finance (Chapter 16) (II)

- **Emission patterns that limit temperature increase from pre-industrial level to no more than 2°C require considerably different patterns of investment.**
- Annual investment in fossil-fired power plants without CCS would decline by 30 (median: -20% compared to 2010) (2 to 166) billion USD during the period 2010–2029.
- Investment in low-emissions generation technologies (renewable, nuclear, and power plants with CCS) would increase by 147 (median: +100% compared to 2010) (31 to 360) billion USD.
- In addition an increase by 336 (1 to 641) billion USD is expected in energy-efficiency investments in the building, transport, and industry sector

Limiting GHG concentrations to 430-530 ppm by 2100 requires large changes in annual investment: 2010-2029



Key Results on Investment and Finance (Chapter 16) (III)

- **Increasing access to modern energy services for meeting basic cooking and lighting needs could yield substantial improvements in human welfare at relatively low cost & only minor effects on global GHG emission levels**

Shifting the large populations that rely on traditional solid fuels (such as unprocessed biomass, charcoal, and coal) to modern energy systems and expanding electricity supply for basic human needs could yield substantial improvements in human welfare for a relatively low cost; 72–95 billion USD per year until 2030 to achieve nearly universal access.

Key Results on Investment and Finance (Chapter 16) (III)

Within appropriate enabling environments, the private sector, along with the public sector, can play an important role in financing mitigation.

In a range of countries, a large share of private sector climate investment relies on low-interest and long-term loans as well as risk guarantees provided by public sector institutions to cover the incremental costs and risks of many mitigation investments. In many countries, therefore, the role of the public sector is crucial in helping these private investments happen. ...

Key Results on Investment and Finance (Chapter 16) (IV)

A main barrier to the deployment of low-carbon technologies is a low risk-adjusted rate of return on investment vis-à-vis high-carbon alternatives often resulting in higher cost of capital.

This is true in both developed and developing countries. Dedicated financial instruments to address these barriers exist and include inter alia credit insurance to decrease risk, renewable energy premiums to increase return, and concessional finance to decrease the cost of capital. Governments can also alter the relative rates of return of low-carbon investments in different ways and help to provide an enabling environment.

Within an appropriate enabling environment, the private sector can contribute to financing climate action.



Key Results on Investment and Finance (Chapter 16) (V)

Appropriate governance and institutional arrangements at the national (e.g. national institutions), regional, and international level need to be in place for efficient, effective, and sustainable financing of mitigation measures.

They are essential to ensure that financing to mitigate and adapt to climate change responds to national needs and priorities and that national and international activities are linked and do not contradict each other.

An enabling environment at the national level ensures efficient implementation of funds and risk reduction using international resources, national funds, as well as national development and financial institutions.

Key Results on Investment and Finance (Chapter 16) (VI)

Important synergies and tradeoffs between financing mitigation and adaptation exist.

Available estimates show that adaptation projects get only a minor fraction of international climate finance. ... , there is a general agreement that funding for both mitigation and adaptation is needed. Moreover, there is an increasing interest in promoting integrated financing approaches, addressing both adaptation and mitigation activities in different sectors and at different levels. [16.6]

CLIMATE CHANGE 2014

Mitigation of Climate Change

www.mitigation2014.org