Future Funding Needs: Adaptation

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Global
Climate Adaptation
Partnership

Background – how is much on the table ?

- The Copenhagen Accord text reads:

- *The collective commitment by developed countries is to provide new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010–2012 with balanced allocation between adaptation and mitigation*

- *….Funding for adaptation will be prioritized for the most vulnerable developing countries, such as the least developed countries, small island developing States and Africa.*

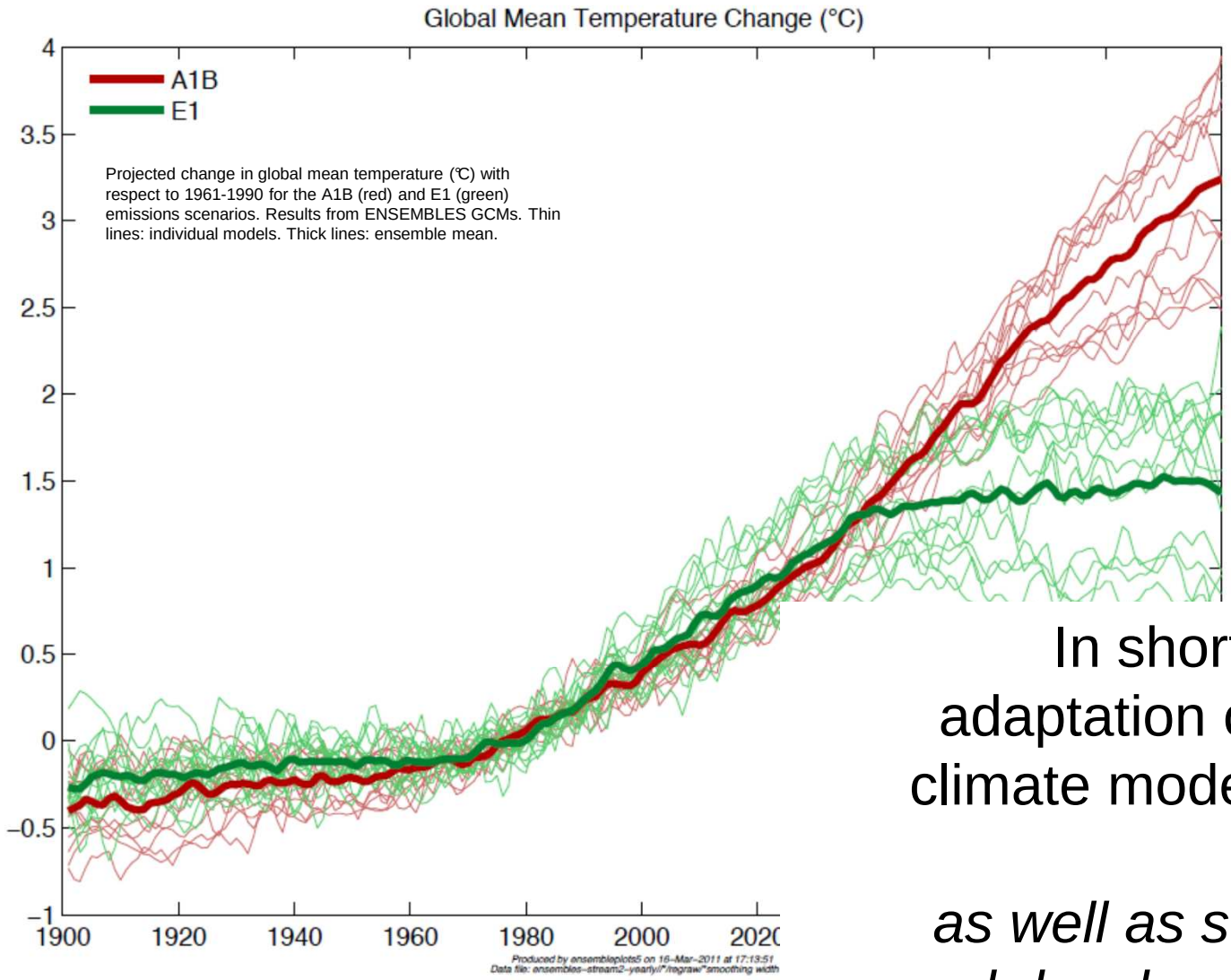
- *In the context of meaningful mitigation actions and transparency on implementation, developed countries commit to a goal of mobilizing jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries.*

- Durban decided to undertake a work programme on long-term finance in 2012

How much is needed?

- The answer depends on
  - The amount of climate change we are adapting to….
  - The methods we use to derive the values……
  - The (developing) countries that receive financing…..
  - The definition of adaptation and what is included……
  - The effectiveness of adaptation…..

What are we adapting to?
In the longer-term, costs vary with scenario



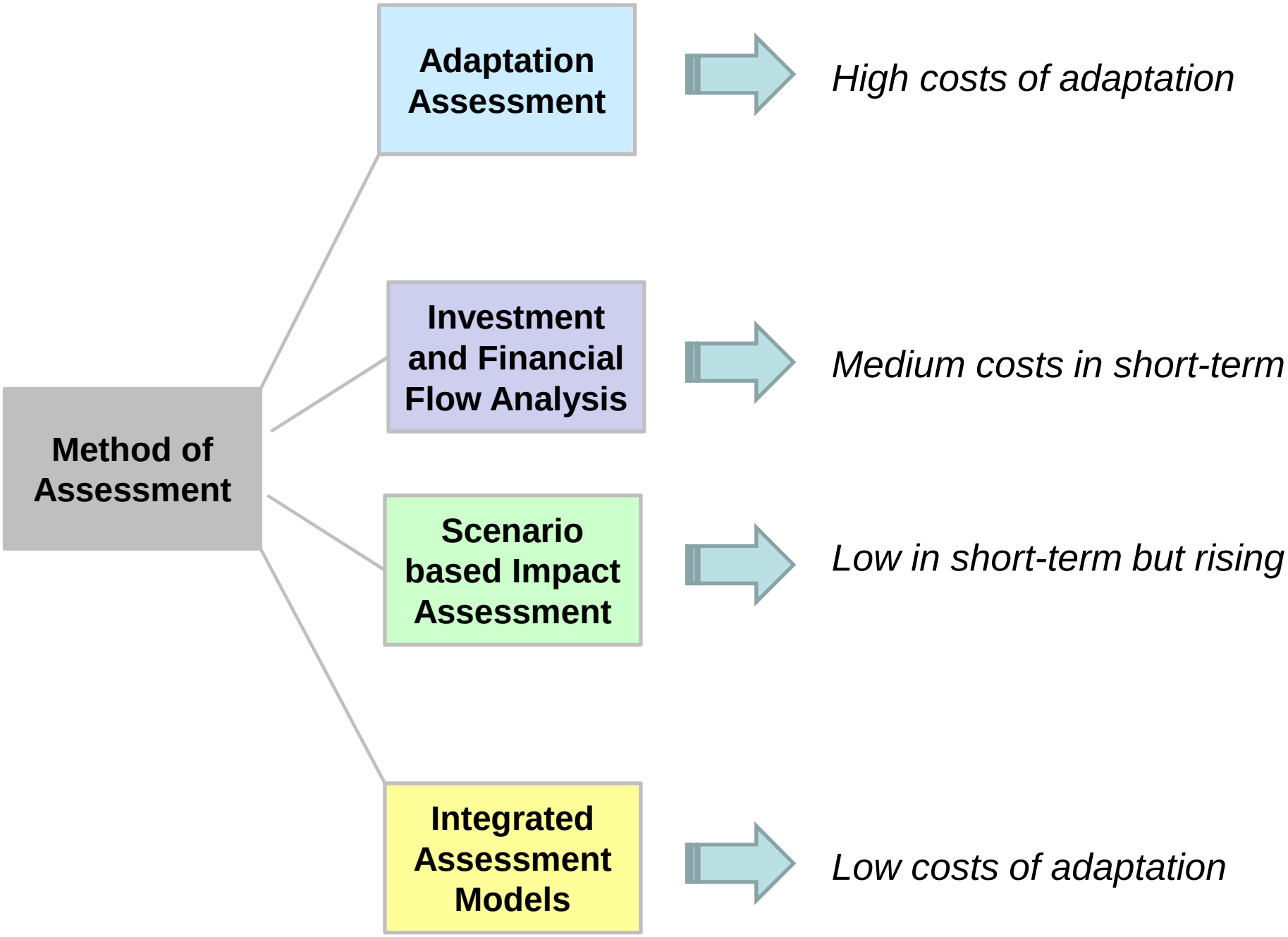
A1B

Mitigation (2°C)

In short-medium term adaptation costs vary with climate model (uncertainty)

as well as socio-economic and development pathways

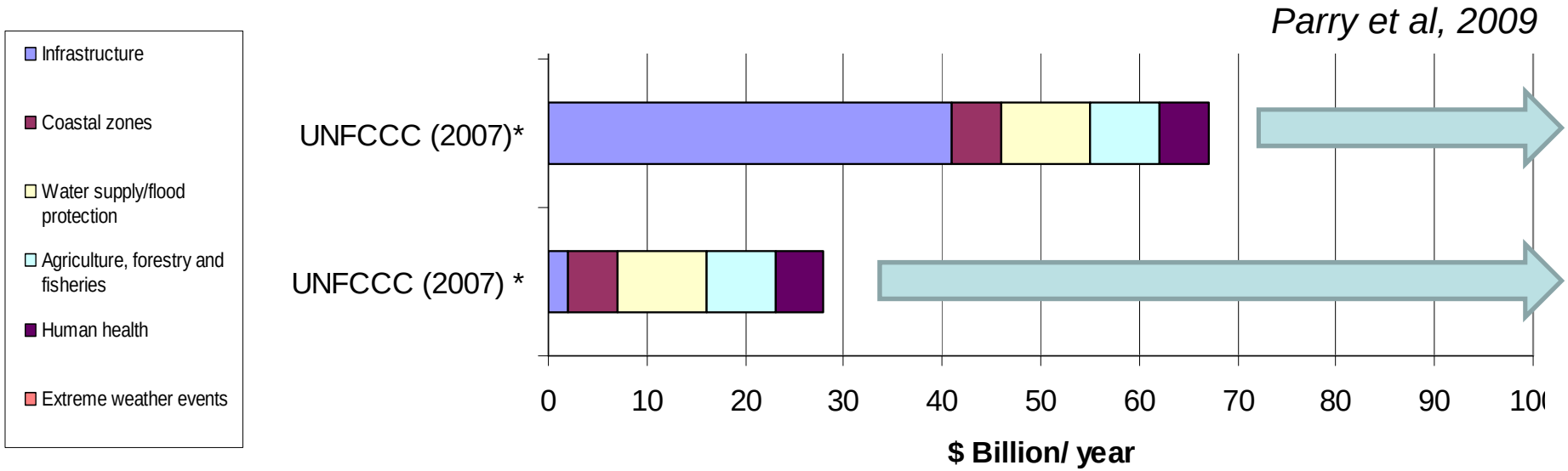
Source Christensen, Goodess, Harris, Climatic and Watkiss, 201


Method of Assessment
Adaptation Assessment
High costs of adaptation
Investment and Financial Flow Analysis
Medium costs in short-term
Scenario based Impact Assessment
Low in short-term but rising
Integrated Assessment Models
Low costs of adaptation

Global

Investment and Financial Flow Analysis

UNFCCC (2007) – for developing countries (2030)



But Parry et al argue factor 2 -3 higher

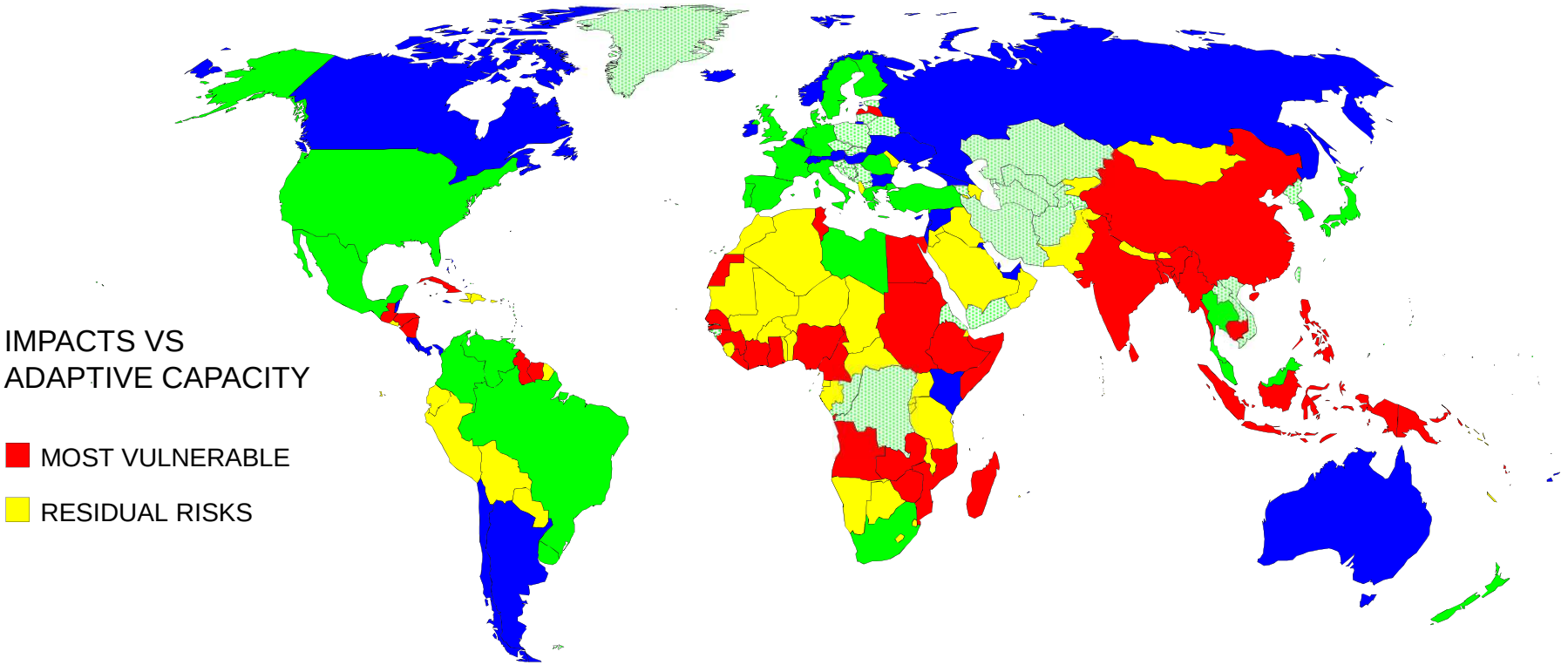
* UNFCCC shows cost of adaptation in the year 2030. A range of values is included for infrastructure based on a range of assumptions,

These aggregate studies might indicate

adaption funding needs are not so different from the Accord

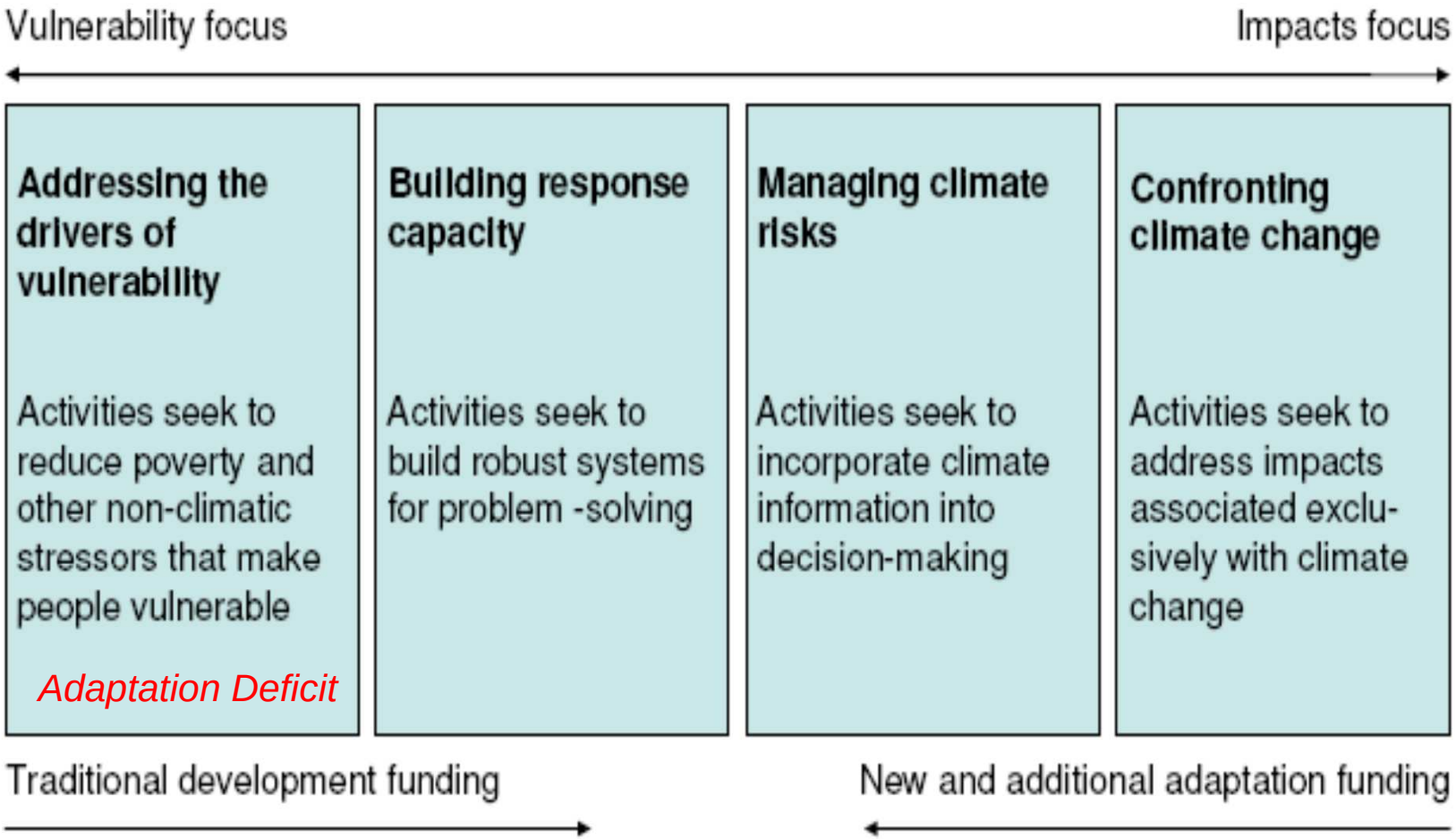
(*ok, and at worst maybe only a factor of two – four out*)

But the costs depend on the countries included



- LDCs only
- MIC, Eastern Europe, Advanced Asian, India, Brazil
- China ?

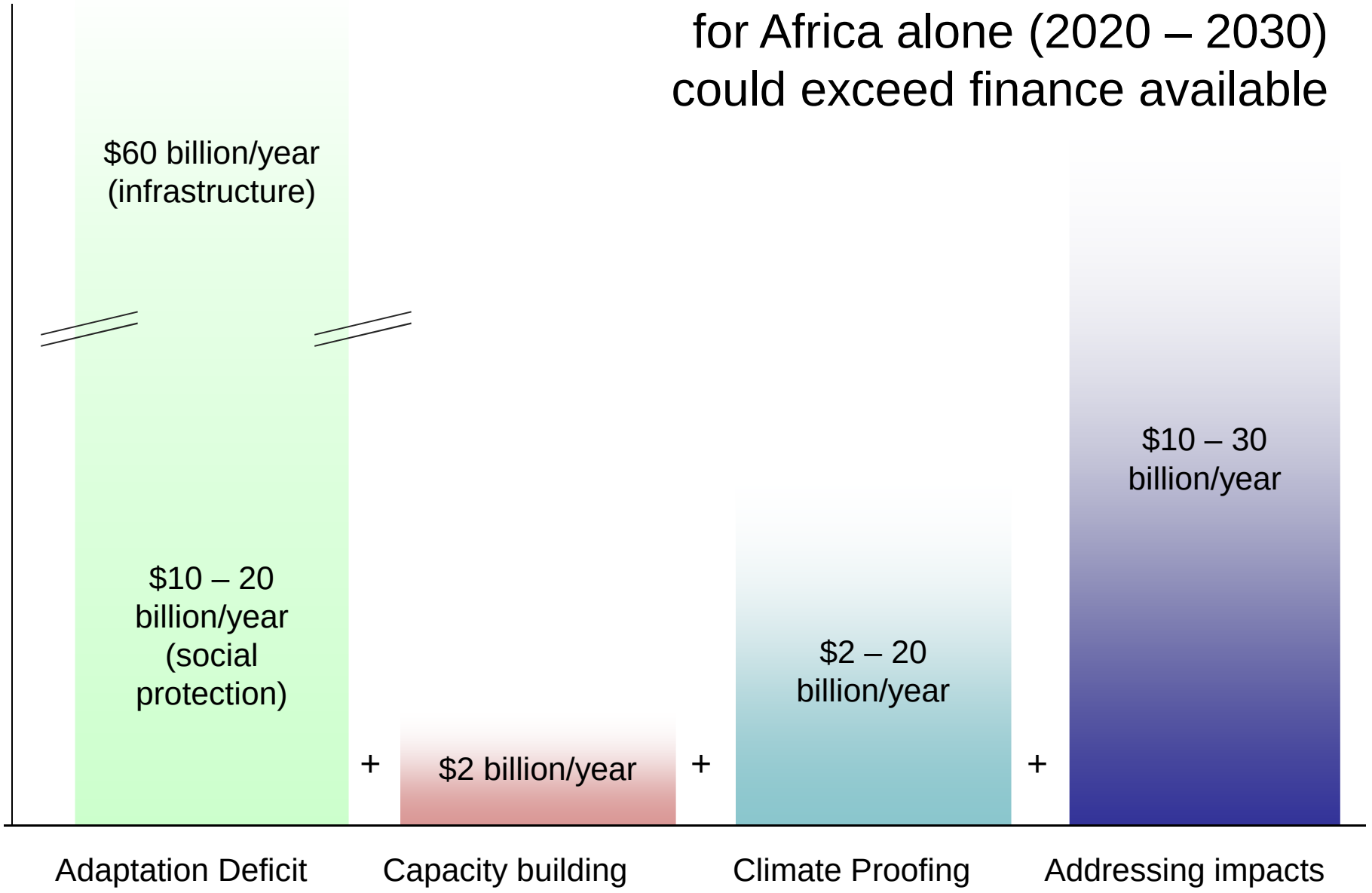
The costs also depend on what are we including



Klein and Persson (2008)

Source: Watkiss et al, (2009); Parry et al (2009); SEI (2008); Grantham (2009); World Bank (2009)

E.g. Aggregate Adaptation Needs for Africa alone (2020 – 2030) could exceed finance available



And whether we believe the numbers ….

- Is $50 billion/yr really enough for the entire developing world to adapt to CC ?
- So why are the numbers so low….
  - Current global estimates assume perfect foresight. They predict and optimise to defined outcomes, allow incremental changes with time without penalty
  - Generally consider marginal impact on top of existing protection (no deficit)
  - They do not consider uncertainty, mal-adaptation, dynamics of timing
- Can compare with more detailed national and sector level analysis
  - suggests global aggregate estimates are very optimistic

Investment and Financial Flow Analysis

UNDP I&FF Assessments
Pilot in 15 countries
Turkmenistan (Savage et al, 2011)

- One sector (water irrigation sector) analysis for Turkmenistan
- Based on national agricultural strategy and climate projections - projected agricultural water deficit of 5.5bn m3 per annum
- NPV Baseline water sector investment 2009-2030: $10.5bn
- NPV Adaptation water sector investment to eliminate deficit: $16.1bn
- NPV Additional IFF Requirement: $5.6bn

Activities included IWRM, production efficiency, irrigation efficiency, advanced irrigation

Coastal sector DIVA IA (EACC, 2009; Nicholls et al, 2011)

Scenario based Impact Assessment

- In Europe, DIVA estimates annual costs of adaptation of €1 – 2 billion a year EU27
- (assume no uncertainty, no deficit, small marginal incremental costs)
  - But Dutch Delta Commission planning to spend this amount in NL alone
  - MSE barrier in Venice capital cost of €4.7 billion
  - Disconnect is due to risk protection levels, uncertainty, new investment, etc.
- In Tanzania, DIVA estimates adaptation cost in 2030 at $32 to $81 million / year rising to $ 34 to $118 million / year by 2050
  - Adaptation Fund – sea wall repair of 1.3 km in Dar es Salaam = $3.4 million

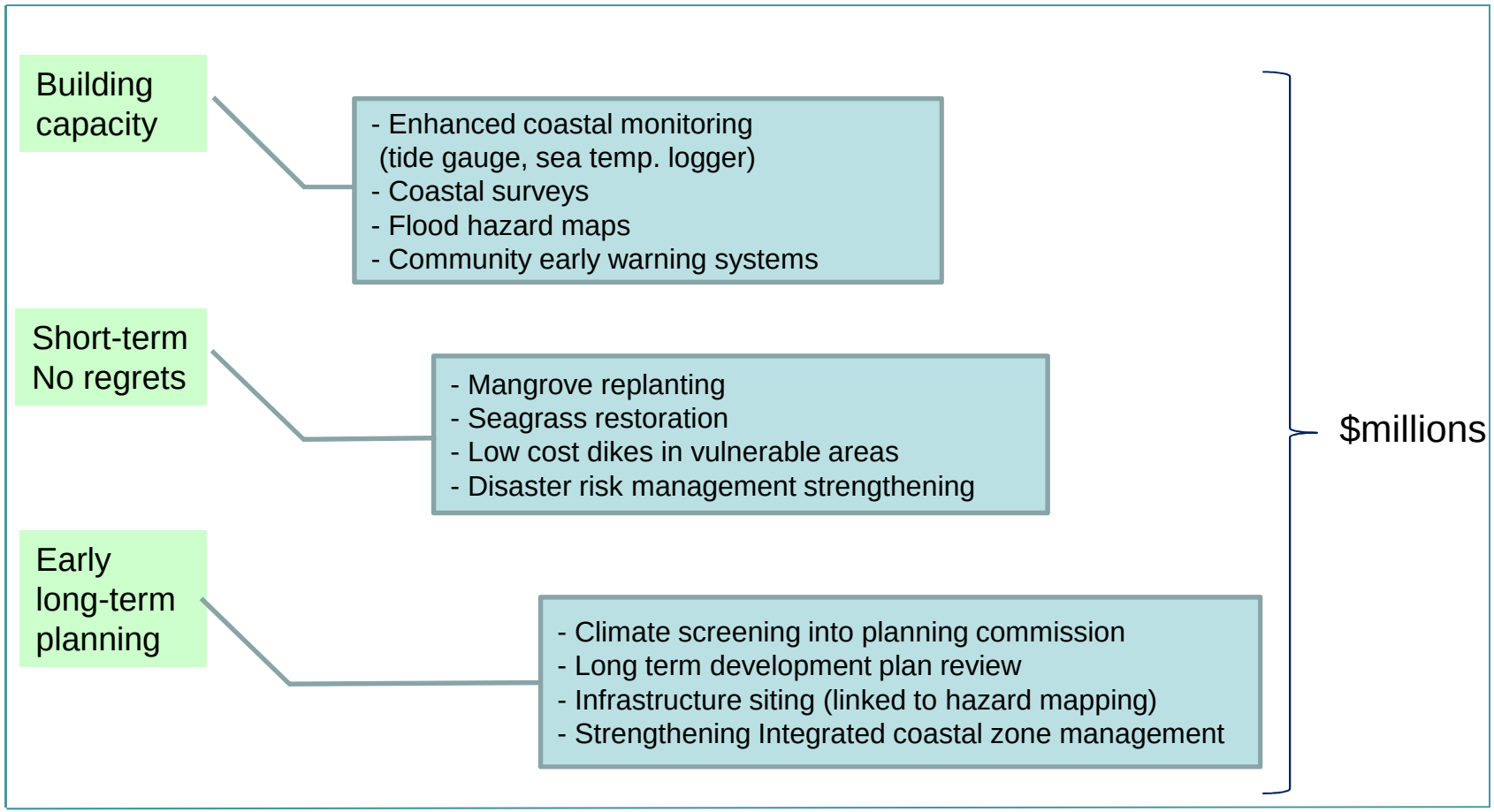
And studies do not factor in the Development reality

- All studies to date assume a highly theoretical application of adaptation
  - Option is selected – unit costs estimated – and adaptation is applied perfectly
- Now moving to practical implementation - and messy and imperfect reality of ODA
  - Whether finance actually translates through effectively (capacity, governance)
  - The effectiveness of the options in situ (capacity, maintenance)
- Plus policy costs, absorptive capacity and unintended consequences (price effects)
- Emerging issue of donor inefficiency not harmonisation
- Host country priorities will not reflect optimal path

But much is possible, e.g. Coastal

Watkiss, 2012

But much of this involves soft or non-technical adaptation
That not included in current suite of adaptation cost curves



Conclusions

- Funding needs determined by many factors
- Even simple global studies indicate Accord probably insufficient (factor 2 - 4)
- More detailed analysis indicates the gap is likely to be much larger
  - And this assumes the fast track and 2020 pledge is delivered
- However, $15 billion in 2012, rising to $50 billion in 2020, could provide huge benefits – building capacity, no regret options, early resilience in LDCs
- But a step change in adaptation funding is going to be needed post 2020