Coherent policies for sustainable development

macroeconomic & structural constraints

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The Challenge of Sustainable Development

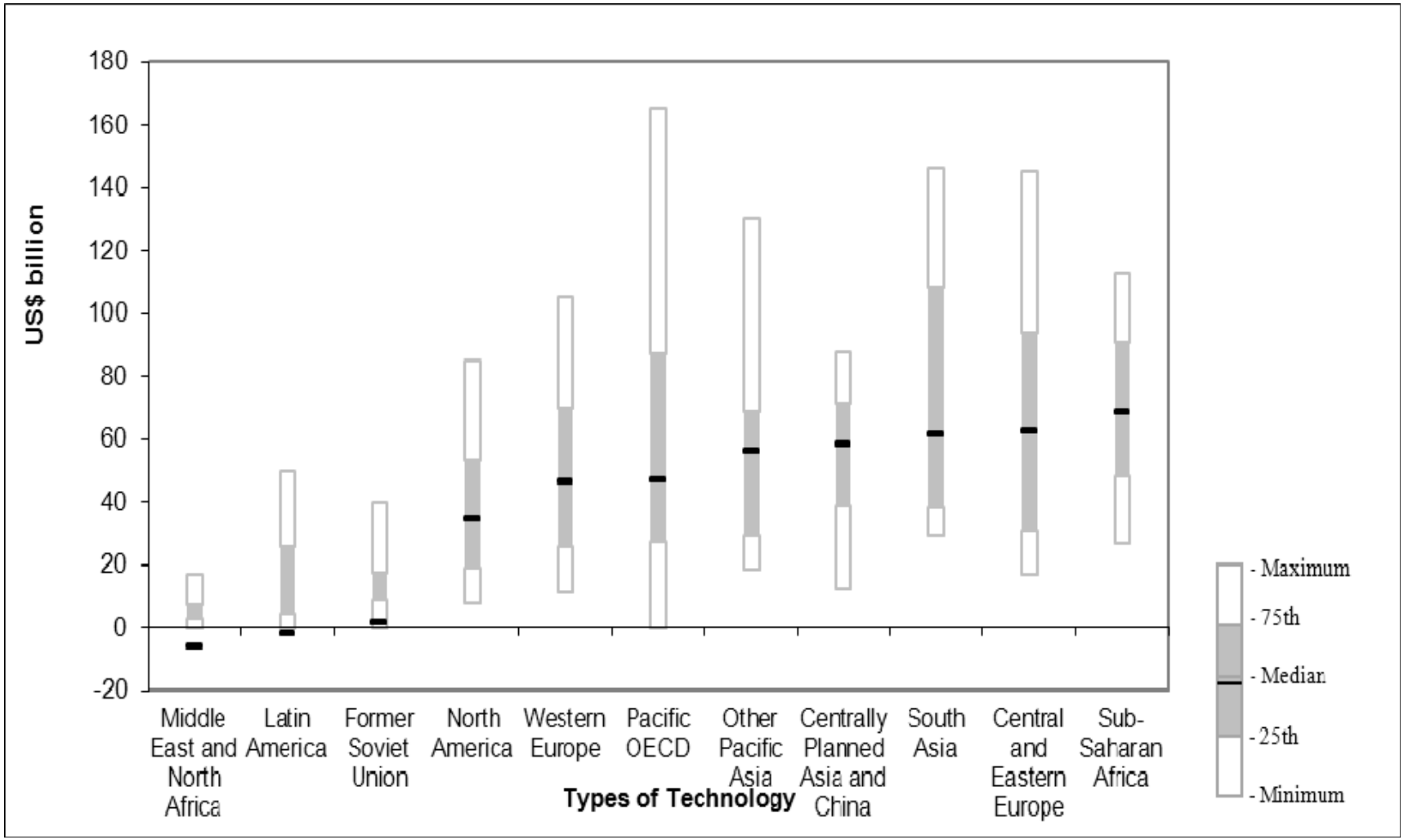
The need for transformative changes reaching the economic, social and cultural domains

- The investment challenge
- The technology challenge
- The challenge of creating and enabling framework
- The challenge of formulating coherent policies

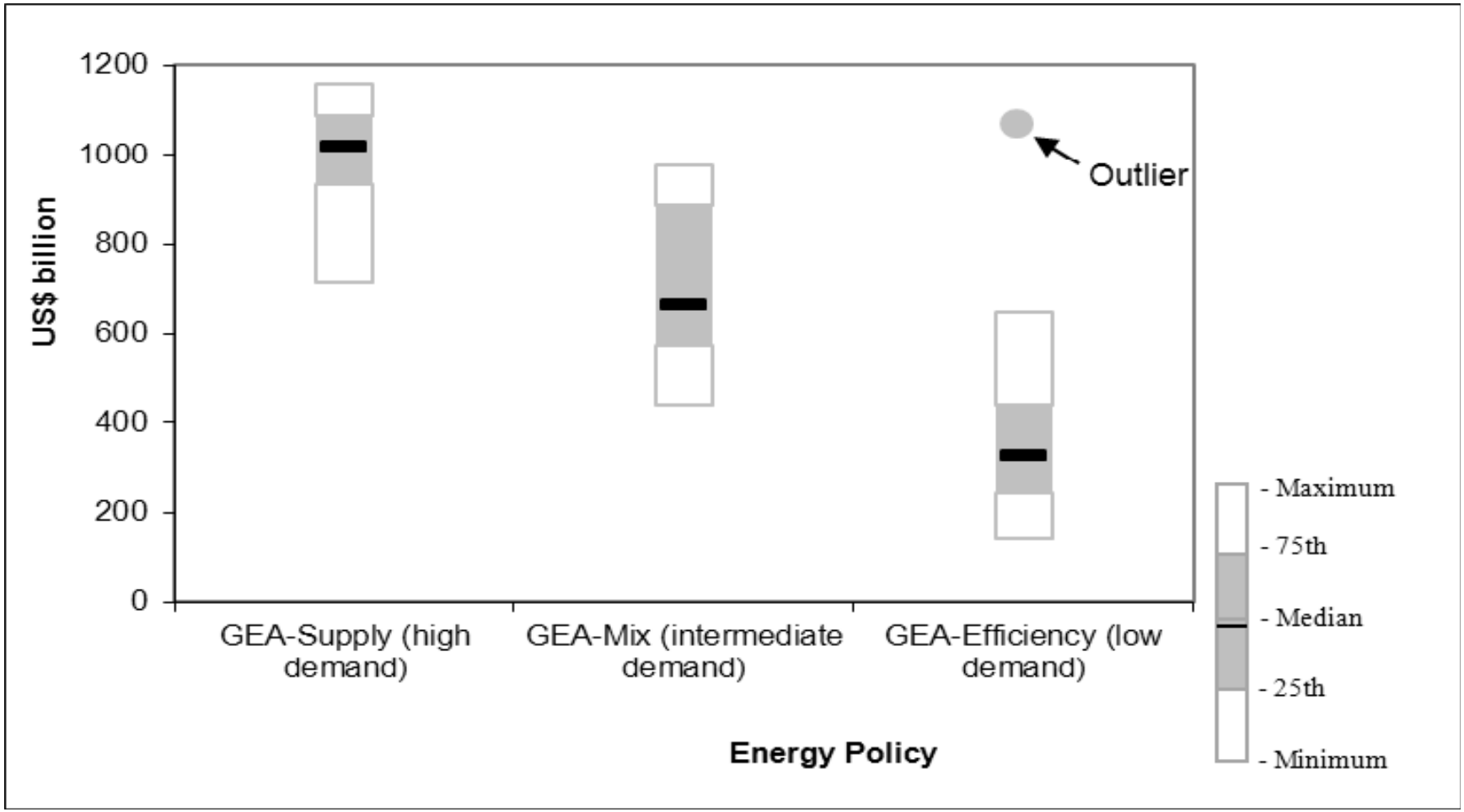
Sustainable Development: The Investment Challenge

- Additional energy investments for sustainability range from -2% to +8 % of GDP
  - REGION Investments are larger in Africa and Asia
  - TECHNOLOGY Wider choices tend to reduce cost
  - POLICIES imply significant changes
- Own MDG estimates suggest that MDG strategies might increase GDP but also decrease it by up to 2%
- Strong public-led investment to catalyze (crowd-in) private funds. Getting prices right will not suffice

Needed investments also change by region

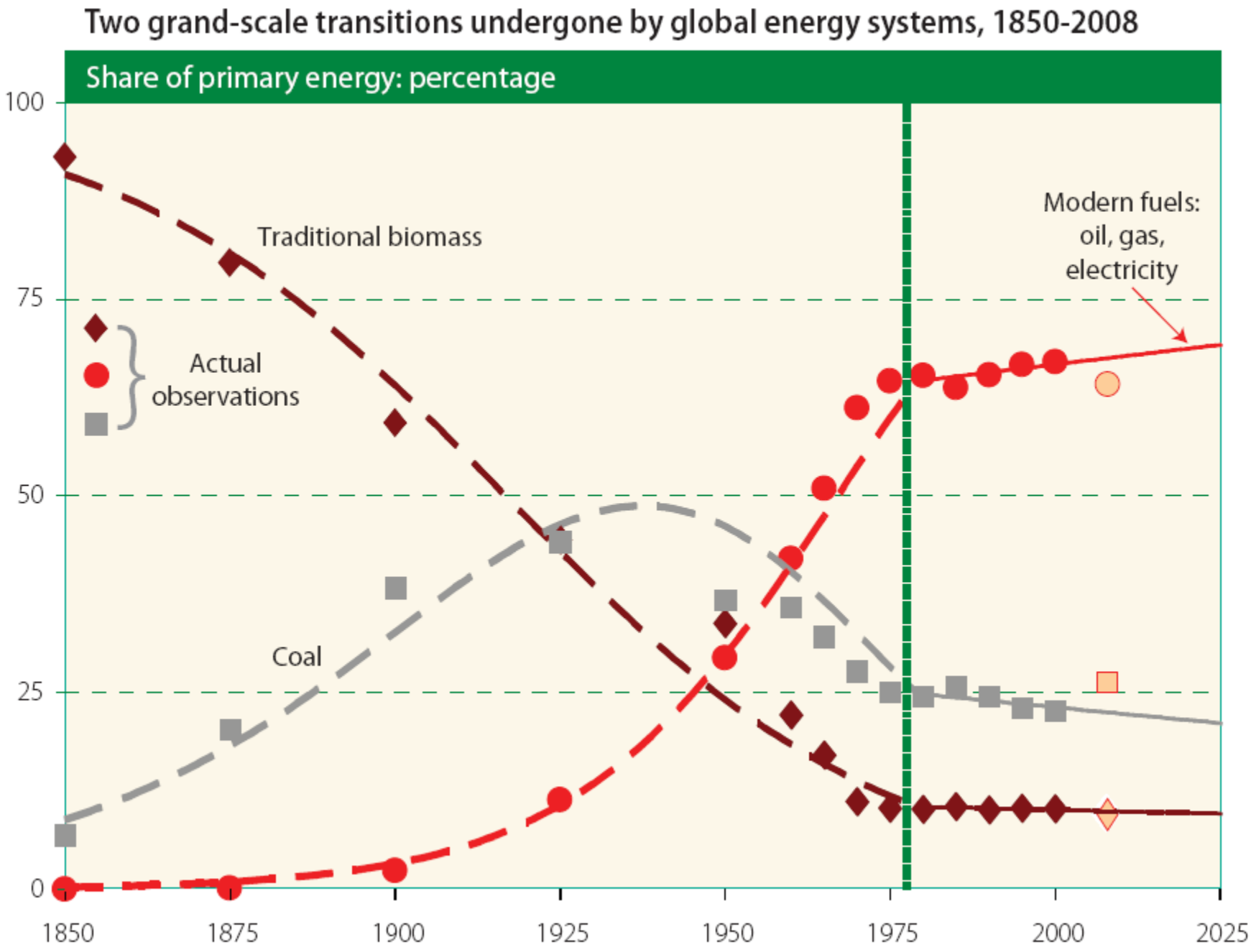


Needed investments change with the mix of policies & technologies



Sustainable Development: The Technology Challenge

- Technology is key for sustainable development, most needed when policies are weak. However, technology innovation also depends on policy
- Despite de rise in investments in renewables, more needs to be done:
  - To increase energy investment (at least to end of 1980's)
  - To transferred & adapt to DCs and even generate
- Another technology transition has began
  - not few public entities & business have engaged, irrespective of emissions
  - Developing countries cannot afford to be left behind


Two grand-scale transitions undergone by global energy systems, 1850-2008
Share of primary energy: percentage
100
75
50
25
0
1850
1875
1900
1925
1950
1975
2000
2025
Traditional biomass
Modern fuels: oil, gas, electricity
Actual observations
Coal

Sustainable Development: The Enabling Framework Challenge

- Property rights (aligning rights with social-global benefits in technology, health & education
- An adequate trade regime aligned with sustainability as a public good
- An adequate macroeconomic framework facilitating the financing of needed investments & allowing for public big-push investments

The Challenge of Designing Coherent Policies for Sustainable Development

- Promote renewables (clean, low-cost decentralized, diversifying sources, energy security)
- Should only used market based instruments? Or should also use regulation?
- How to use taxes, subsidies, regulation & direct industrial policies,
- How to ensure consistency between energy policies, land use, water management, urban design, transport, & the environment

The Challenge of Designing Coherent Policies for Sustainable Development

- Should a developing country embark in extending its energy system based on coal, oil or renewables?
- Which way: investments in productive infrastructure or in health & education?
- How to cope with climate change & assess its social cost?
- How to harmonize growth, industrialization & high value-added services, with poverty eradication, inequality reduction & social inclusion?
- How to balance the wellbeing of the current & future generations?

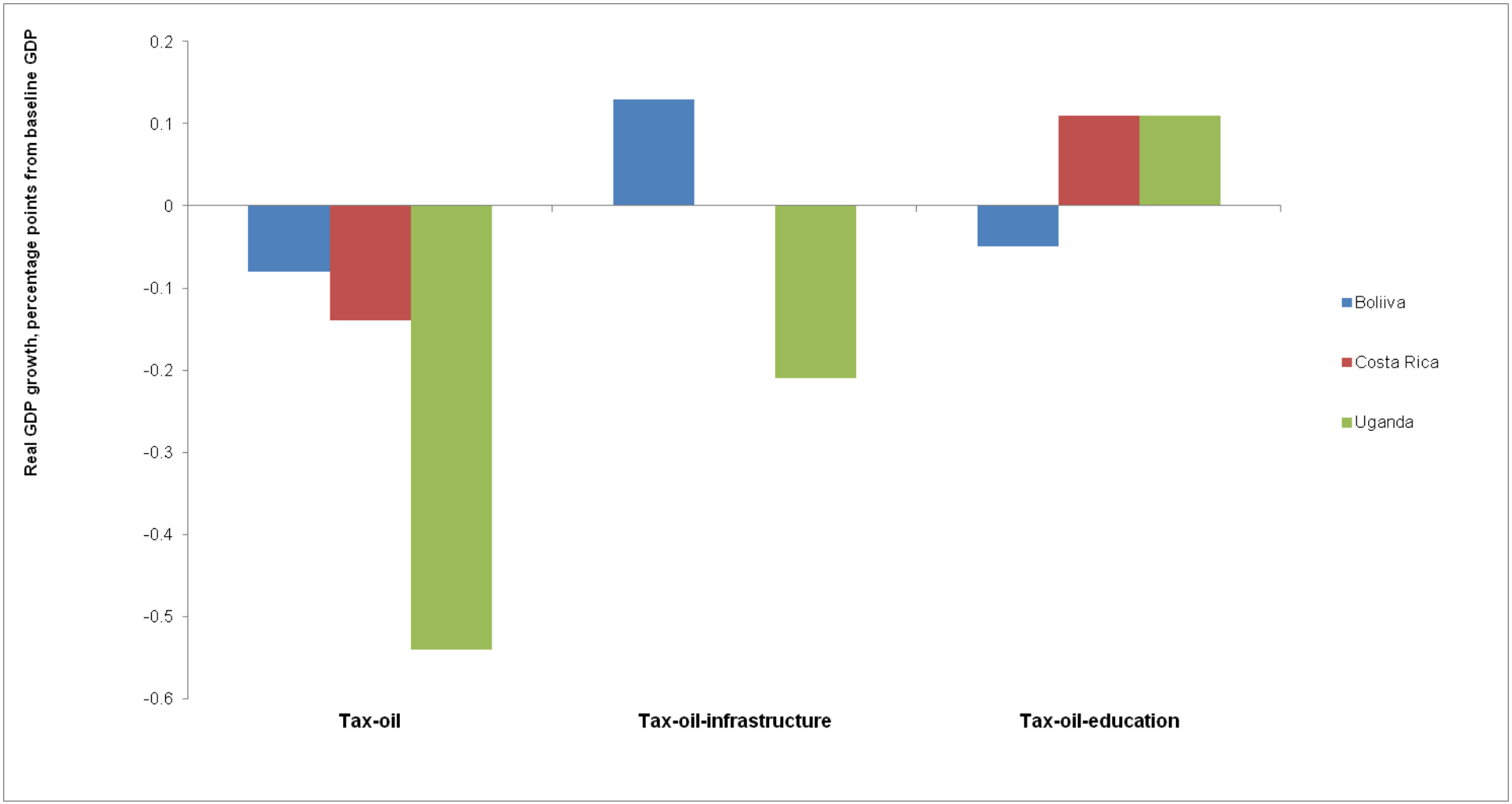
Examples of needed policy analysis

- Impose a tax on oil to generate a revenue equal to 2% of GDP in Bolivia, Costa Rica and Uganda
- Revenue is used to a) finance infrastructure, or b) education

Raw example of possible simulations

- Tax on oil decreases GDP growth rate by up to 2 percentage points
- The effect of investing added revenues varies across countries and the type of investment
- Using the tax revenue tends to neutralize and even more than offset the negative effect of the oil tax

Impact on GDP growth of a tax oil and investment in education, percentage points from baseline GDP



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- For NATIONAL sustainable development strategies