

The Economics of Climate Change in Southeast Asia: A Regional Review

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I. Why climate change matters for S.E. Asia

- First, S.E. Asia is one of the most vulnerable regions in the world
 - Geographically vulnerable: tropical climate, long coastlines
 - High concentration of population and economic activity in coastal areas
 - Heavy reliance on climate-sensitive sectors
 - Millions trapped in poverty with low adaptive capacity



Plan of Talk

- Why climate change matters for Southeast Asia
- Responding to climate change: adaptation
- Responding to climate change: mitigation
- Summary and policy messages



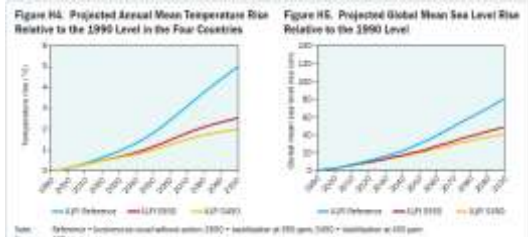
I. Why climate change matters for S.E. Asia

- Second, climate is changing in S.E. Asia, and the worst is yet to come
 - Temperature increased by 0.1 – 0.3 °C per decade during 1951-2000
 - Precipitation trended downward
 - Sea level rose 1-3 cm per decade
 - Increased intensity and frequency of extreme events such as heat waves, droughts, floods, storms

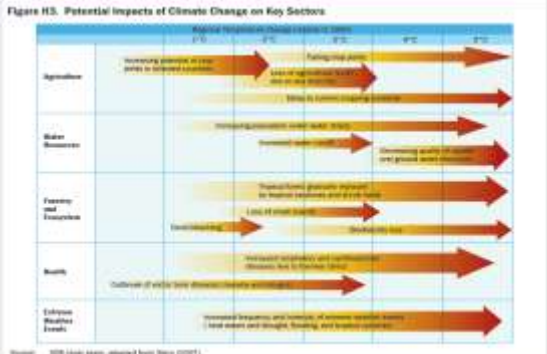


I. Why climate change matters for S.E. Asia

- ... the worst is yet to come.
 - Without urgent action, S.E. Asia's mean temperature could increase 4.8 °C and sea level up 70 cm by 2100 from the 1990 levels



I. Why climate change matters for S.E. Asia



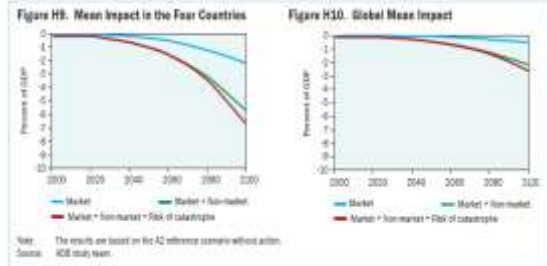
I. Why climate change matters for S.E. Asia

- ... the worst is yet to come.
 - Increasingly drier weather conditions over the next few decades; dry seasons could become drier and wet seasons wetter
 - Impact would be felt across sectors, disproportionately by the poor



I. Why climate change matters for S.E. Asia

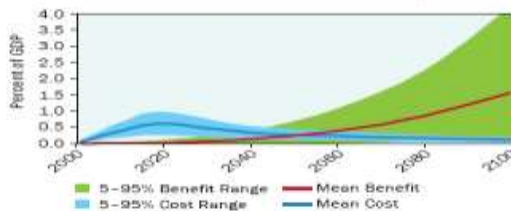
- Third, total damage could be equivalent to losing 6.7% of GDP each year by 2100
 - More than twice the global average loss



II. Responding to climate change: Adaptation

- Adaptation makes economic sense.

Figure H13. Cost and Benefit of Adaptation



Note: 'Mean' indicates the average outcome of the simulations and the range of estimates from the 5th to the 95th percentile is the shaded area. Benefit in terms of avoided damage is based on A2 scenario.

Source: ADB study team.

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II. Responding to climate change: Adaptation

- Another priority is to scale up proactive adaptation in key sectors
 - Water: improving water management and flood control system
 - Agriculture: more efficient irrigation/new crop variety
 - Forestry: safeguarding forests/planting new forests
 - Coastal resources: mangrove conservation/protective sea walls
 - Health: better surveillance/disease prevention
 - Infrastructure: climate proofing

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II. Responding to climate change: Adaptation

- The region is already adapting, but more needs to be done. One priority is to strengthen overall adaptive capacity
 - Step-up efforts to raise public awareness
 - More research to better understand climate change and its impact, especially at local level
 - Enhancing policy and planning co-ordination
 - Mainstreaming adaptation in development planning

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III. Responding to climate change: Mitigation

- Some data on the region's GHG emissions
 - S.E. Asia contributed 12% of the world's total GHG emissions in 2000, with its emissions rising twice as fast as the global average during 1990-2000
 - Land-use and forestry sector contributed 75% of the regional total, energy 15%, and agriculture 8%
 - Emissions from the energy sector is growing at the fastest pace

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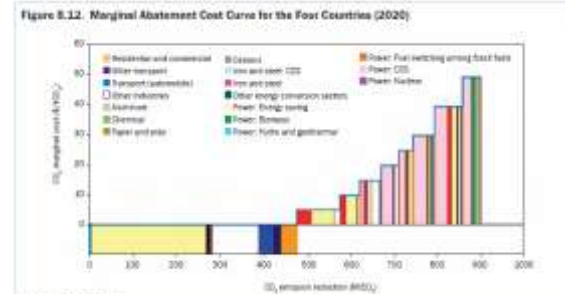
III. Responding to climate change: Mitigation

- The forestry sector has the greatest potential for reducing the region's emissions:
 - REDD, afforestation/reforestation, and improved forest management
 - A study cited by IPCC indicates that S.E. Asia has the highest sequestration potential (about 40% of the world's total during 2000-2050) among all regions
- The region also has the world's largest technical mitigation potential in agriculture

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III. Responding to climate change: Mitigation

- The region's energy sector holds vast potential for mitigation



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III. Responding to climate change: Mitigation

- The region's energy sector holds vast potential for mitigation
 - Improving energy efficiency reduces emissions and at the same time saves costs – “win-win” options
 - It is estimated that such “win-win” options would have the potential to mitigate 475 MtCO₂ each year by 2020 (40% of BAU energy CO₂ emissions that year)
 - Other options (fuel switching, renewables, CCS) can mitigate another 40% at a cost less than 1% of GDP

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IV. Summary and policy messages

- Climate change is affecting S.E. Asia. The worst is yet to come. With no global actions, climate change could cost the region more than twice as high as global average by 2100
- Combating climate change requires a *global solution* built on a *common but differentiated responsibility*. S.E. Asia should play an important part in working towards such global action given its high stake.
- The region has made significant efforts in adapting to climate change impact, but more is needed to *mainstream adaptation in development planning*.
- While adaptation is a priority, S.E. Asia should make *greater mitigation efforts*. Low carbon growth brings co-benefits

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IV. Summary and policy messages

- Adaptation and mitigation require a *comprehensive policy framework, incentives* for private sector action, *elimination of market distortions, ample financial resources*, among others.
- *International funding and technology transfer* are critical for the success of adaptation and mitigation actions in S.E. Asia
- The region should *enhance its capacities* to make better use of the existing and potential international funding sources

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Thank You!

The report is available at www.adb.org

IV. Summary and policy messages

- *Regional cooperation* offers effective means to deal with cross-boundary issues
 - e.g. water resources, forest fires, extreme events, outbreak of diseases, and learning and knowledge sharing
- Need to strengthening *policy and planning coordination* among different ministries and levels of government
- Need for *more research*

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