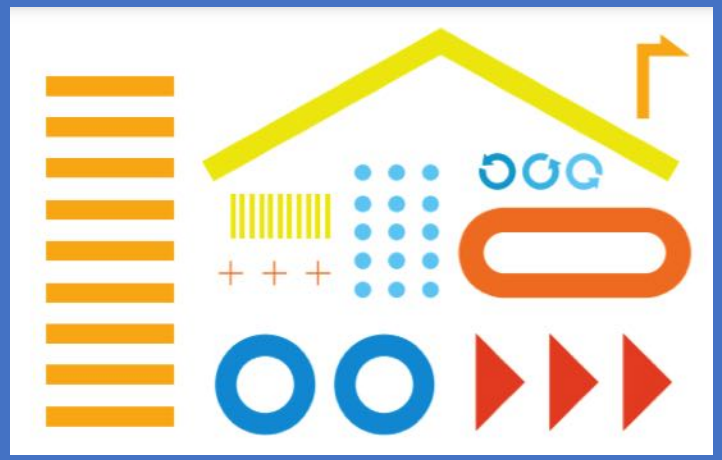


# DISASTER RESILIENCE IN ASIA

## A SPECIAL SUPPLEMENT OF ASIA'S JOURNEY TO PROSPERITY: POLICY, MARKET, AND TECHNOLOGY OVER 50 YEARS



ADB

# Outline

## Part I: Disasters

1. Rising trend of disaster risk
2. The tremendous costs of disasters
3. Drivers of disaster risk
4. Asia's disaster resilience and risk management over the last 50 years

## Part II: The COVID-19 Disaster

5. COVID-19—A global health crisis
6. Economic impact
7. Government responses
8. Looking ahead
9. Questions and further readings

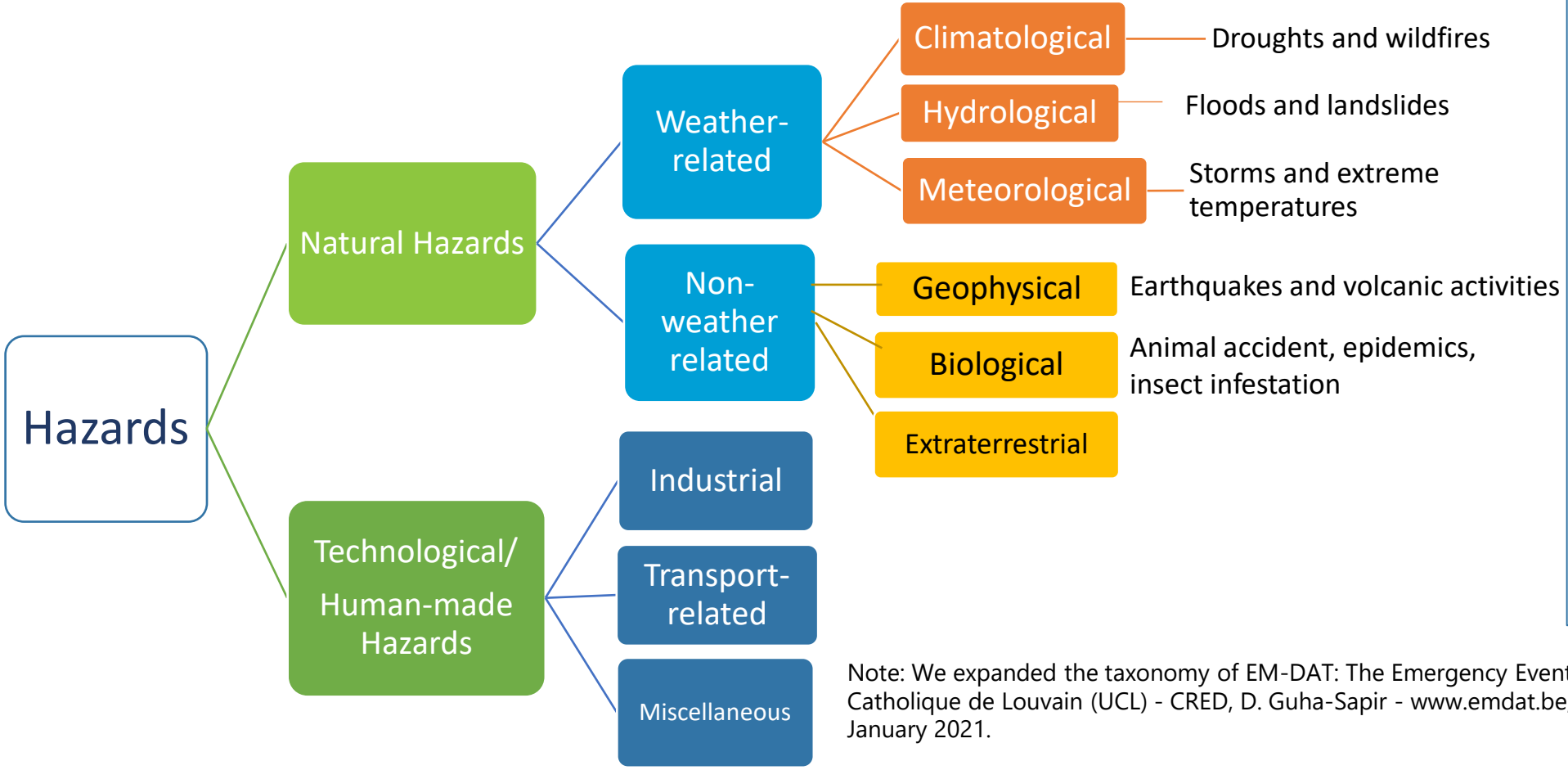
# Outline

## Part I: Disaster resilience in Asia

1. Rising trend of disaster risk
2. The tremendous costs of disasters
3. Drivers of disaster risk
4. Asia's disaster risk resilience and risk management over the last 50 years

# 1. Rising trend of disaster risk

- Hazards are either natural or human-made. Over the last 50 years, many hazards in Asia have translated into risks that eventually materialized into disasters.




Asia's exposure to a wide range of **natural and technological hazards** has resulted in numerous disasters that have cost the region and its inhabitants huge **losses** in terms **of livelihoods, properties, and lives.**

Note: We expanded the taxonomy of EM-DAT: The Emergency Events Database - Université Catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. Accessed 25 January 2021.

# 1. Rising trend of disaster risk

- A disaster occurs when a hazard interacts with an exposed and vulnerable population, causing harm to people, damaging physical assets such as property and infrastructure, and with indirect losses from economic activity foregone.

***Hazards***

***Exposure***

***Vulnerability***

| ***Direct*** | ***Indirect*** | ***Spillovers*** |
|---|---|---|
| **Mortality**<br>**Morbidity**<br>**Displacement**<br>**Asset damage** | **Foregone economic activity** | **Time**<br>• Industrial shifts<br>• Inter-generational<br>**Space**<br>• Supply chains<br>• Migration |

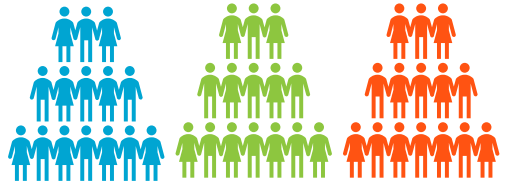
Source: Asian Development Bank. 2019a. *Asian Development Outlook 2019: Strengthening Disaster Resilience*. Manila.

# 1. Rising trend of disaster risk

- In the most affected areas, the occurrence of disasters can wipe out years of progress in economic development and poverty reduction. For example, health and economic costs from COVID-19 have continued to pile up in Asia and the rest of the world.

  - The global economy was estimated to have contracted by 3.5% in 2020 (IMF, 2021), with developing Asia's economies down by 0.4% (ADB, 2020).

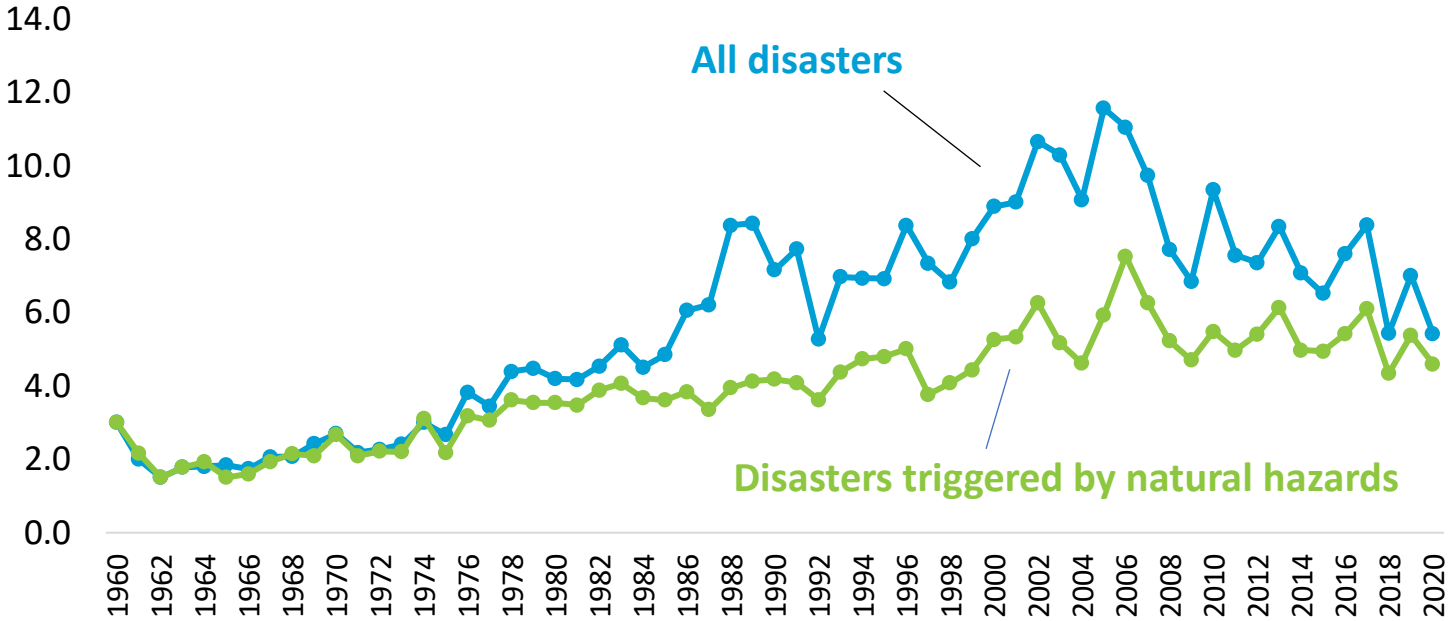
  - An estimated 78 million–162 million people in developing Asia fell into poverty (ADB, 2020).



# 1. Rising trend of disaster risk

- Across developing Asia, disasters triggered by natural and technological hazards increased, in terms of national average disaster occurrence per year, from 1960 to 2005. It has generally been on a downward trend since then.

**Disaster Occurrence, Natural and Technological, Developing Asia, 1960–2020**




Notes: Disasters are either natural or manmade. Figures are simple averages of number of disasters in developing Asian economies with at least one disaster occurrence per year.
Source: ADB estimates using EM-DAT: The Emergency Events Database - Université Catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. Accessed on 25 January 2021.

- Disasters triggered by natural hazards may not be entirely caused by nature, but by a combination of natural hazards and human behavior that increases exposure or vulnerability (World Bank and United Nations, 2010). With this caveat, we follow EM-DAT and common practice when using the term “natural disaster.”

# 1. Rising trend of disaster risk

- Since the 1960s, about a third of all global disasters triggered by natural hazards has occurred in developing Asia. The share of people affected by these disasters has also been disproportionately large in the region.

At least **4 in every 5** people **affected** by **natural hazards** live in developing Asia.

Between 1960 and 2020, the region accounted for **85%** of the number of **affected persons**, **65%** of the **death toll**, and **27%** of **damage** from global disasters triggered by natural hazards.

**Developing Asia's Share in Global Disasters Triggered by Natural Hazards, by Decade, 1960–2020**
(% of total)

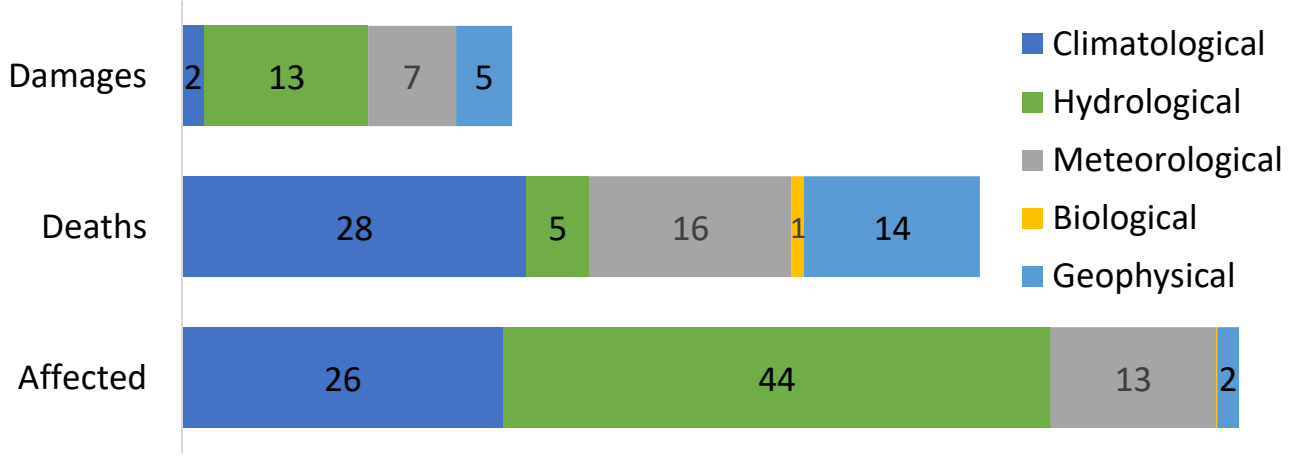
| | 1960–1969 | 1970–1979 | 1980–1989 | 1990–1999 | 2000–2009 | 2010–2019 | 1960–2020 |
|---|---|---|---|---|---|---|---|
| Death toll | 95 | 70 | 14 | 56 | 76 | 18 | 65 |
| Number affected | 84 | 86 | 87 | 88 | 89 | 76 | 85 |
| Damage | 6 | 24 | 16 | 28 | 30 | 25 | 27 |
| Total incidents | 35 | 40 | 36 | 35 | 34 | 37 | 36 |

Source: ADB estimates using EM-DAT: The Emergency Events Database - Université Catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. Accessed on 25 January 2021.

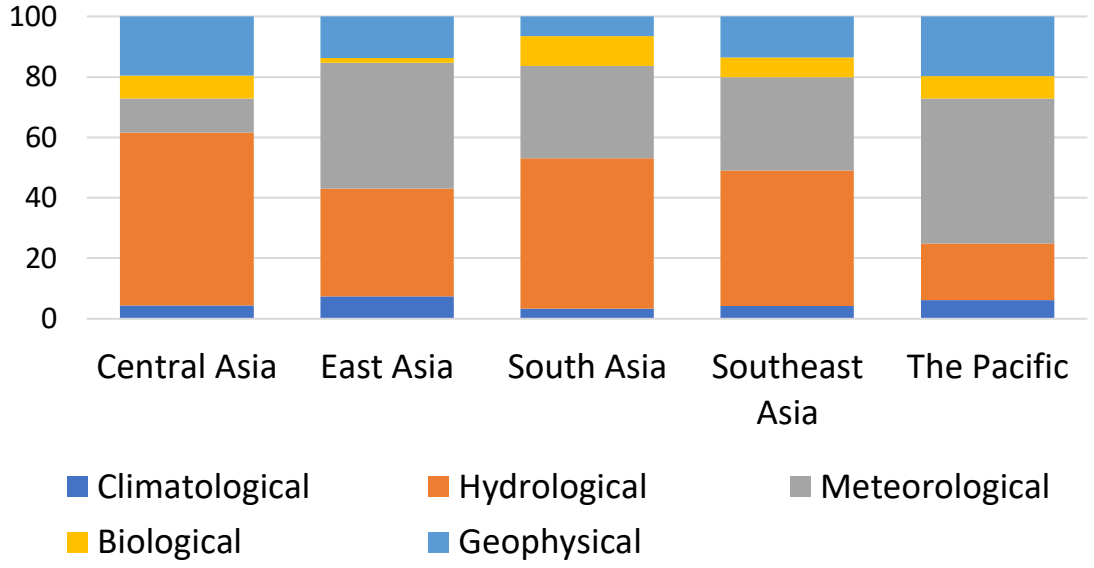
# 1. Rising trend of disaster risk

- Weather-related events (mostly floods, storms), make up 82% of disasters triggered by natural hazards in Developing Asia. Mortality from these events is increasing and underreported. Climatological disasters have recorded the most deaths (e.g., from 1960s drought in India).

**Developing Asia's Share in Global Disasters, by Type of Disaster, 1960–2020** (% of total)




**Distribution of Disaster Occurrence, 1960–2020** (% of total)




Notes: Climatological disasters include droughts and wildfires; hydrological disasters include floods and landslides; meteorological disasters include storms and extreme temperatures; biological disasters include animal accidents, epidemics, and insect infestations; and geophysical disasters include earthquakes, dry mass movements, and volcanic activities.

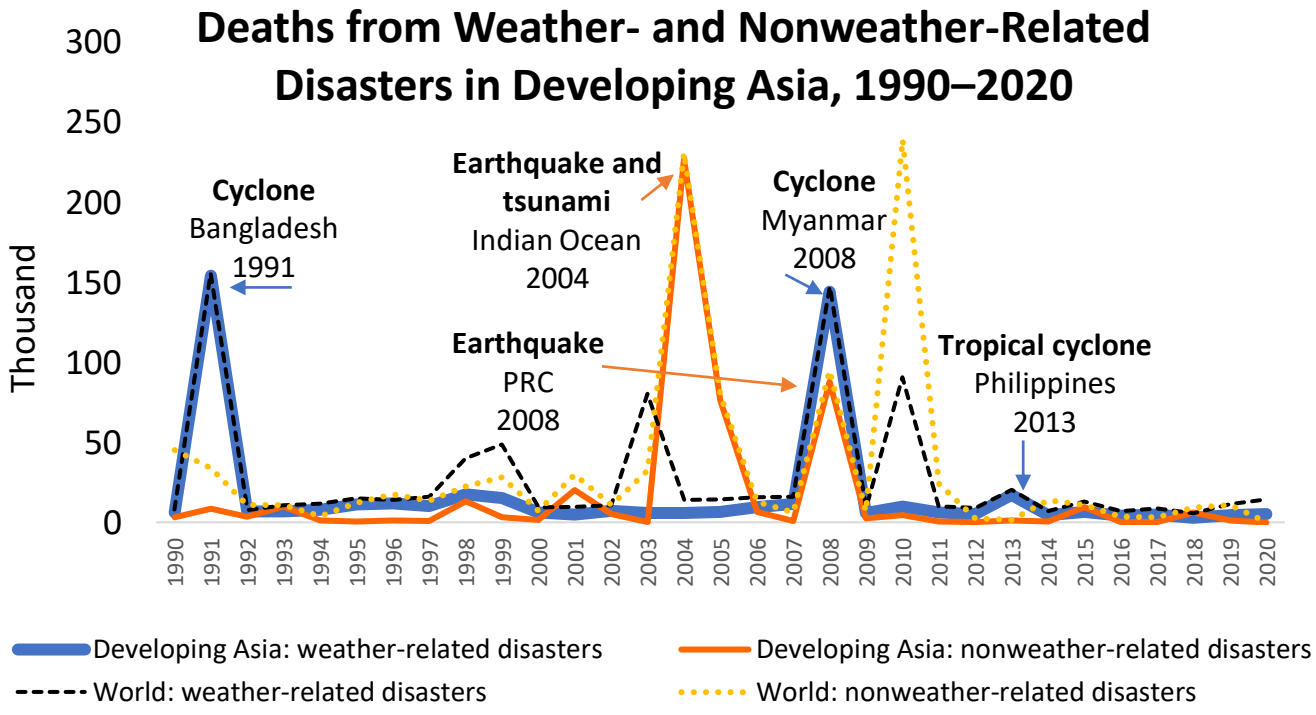
Source: ADB estimates using EM-DAT: The Emergency Events Database - Université Catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. Accessed on 25 January 2021.

# 2. The tremendous cost of disasters

- Developing Asia is the most vulnerable region in the world. From 2000 to 2020, more than **half** of global casualties, **four-fifths** of total affected by, and more than **one-fourth** of damages from **disasters triggered by natural hazards** are from developing Asia. The death toll from the most devastating catastrophes in the region demonstrates its disproportionate share of total deaths.

**Most Devastating Disasters in Developing Asia (number of deaths), 1990–2020**

| | Disaster | Deaths |
|---|---|---|
| 1 | Indian Ocean earthquake and tsunami, 2004 | 226, 096 |
| 2 | Cyclone Gorky in Bangladesh, 1991 | 138, 866 |
| 3 | Cyclone Nargis in Myanmar, 2008 | 138,366 |
| 4 | Earthquake in the People's Republic of China, 2008 | 87,476 |
| 5 | Earthquake in Pakistan, 2005 | 73,338 |



# 2. The tremendous cost of disasters

- **Short-term effects.** Disaster effects are often localized, with the affected area bearing most of the financial damage. These local effects are also often short-lived since households temporarily evacuate then return to their homes later.

Past studies often dwell on the macroeconomic or regional impacts, leading to **missed opportunities** for building **resilience locally**.

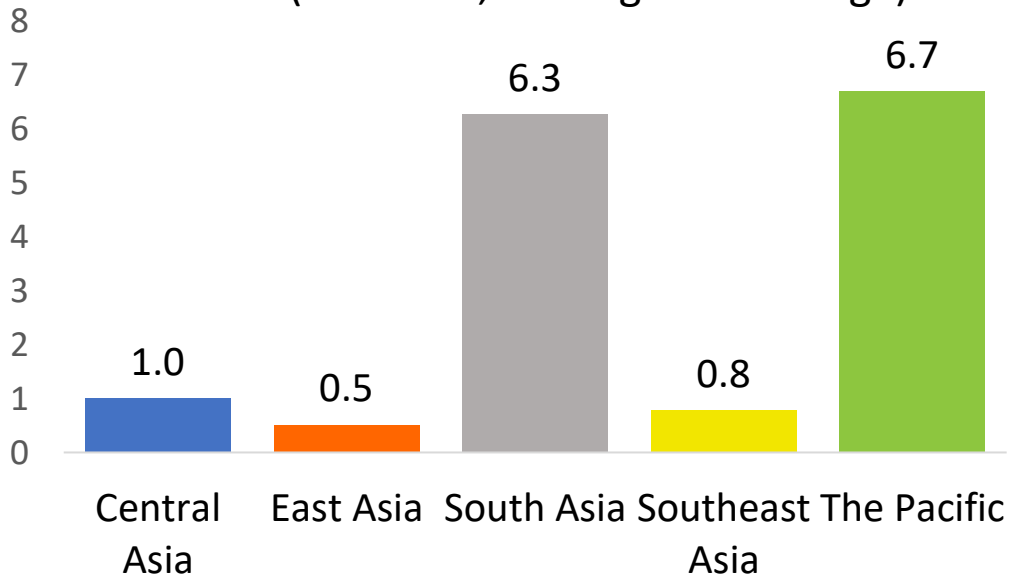
The immediate economic effects of disasters on local economic activity can be substantial (e.g., tropical storms can **reduce local activity** in the Philippines by 1.7%. In severe cases, the reduction is as much as 23% (Strobl, 2019)).

**Climate change** heightens impact, especially in small countries (e.g., Cyclone Pam in Vanuatu reduced GDP by 29%).

# 2. The tremendous cost of disasters

- **Long-term and ripple effects of disasters.** Severe disasters can have more persistent effects. Economic recovery can also be slow or incomplete for areas where there is little diversity in employment, production, and trade. Small island economies are especially vulnerable.

**Damages from Disasters Triggered by Natural Hazards, 2000–2019**
(% of GDP, unweighted average)




Source: ADB estimates using EM-DAT: The Emergency Events Database - Université Catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. Accessed on 25 January 2021

Disasters can destroy **critical infrastructure** (such as airports).

Disaster effects can persist due to their macroeconomic impacts through **market prices.**

Disaster effects can also be pervasive, spreading via **supply chain linkages.**

Disasters can also create **displaced populations.**

# 3. Drivers of disaster risk

- In developing Asia, exposure to disaster risk has risen over the last half century due to growing populations and economic growth. Generally speaking, a disaster occurs when a hazard interacts with an exposed and vulnerable population, causing harm to people, damaging physical assets such as property and infrastructure, and with indirect losses from economic activity foregone.

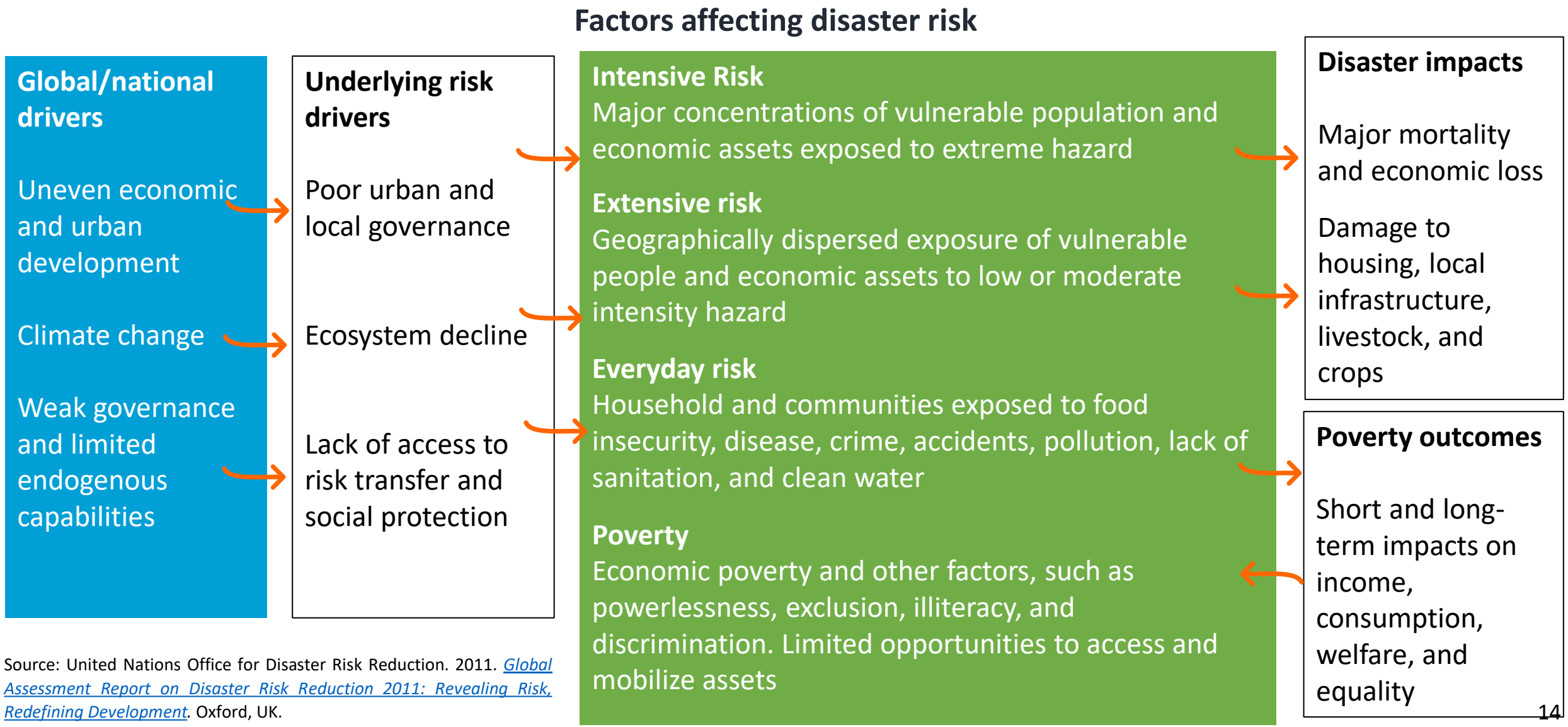
The region's economic transformation has led to greater concentration of assets and people in high-risk locations, including coastal areas and densely populated megacities.

- The 2011 flood in Greater Bangkok incurred more than $46.5 billion in damages, making it the costliest flood ever documented globally.

In very extreme natural hazards, exposure plays a larger role than vulnerability in determining the extent of disasters, regardless of the inhabitants' income, race, or social class.

Higher income-economies with stronger institutions however tend to have lower vulnerability to disasters. Meanwhile, poverty increases vulnerability, and is intricately linked with other underlying factors, making it both a driver and a consequence of disaster risk.

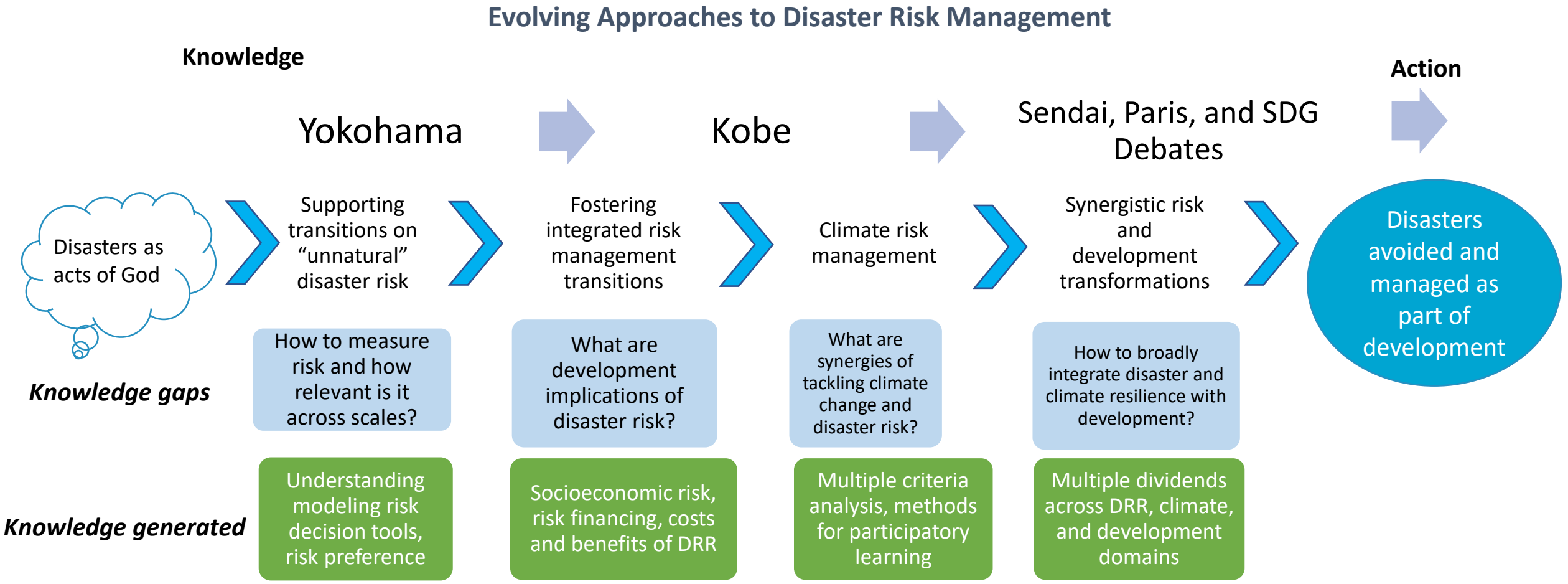
# 3. Drivers of disaster risk




Source: United Nations Office for Disaster Risk Reduction. 2011. *Global Assessment Report on Disaster Risk Reduction 2011: Revealing Risk, Redefining Development*. Oxford, UK.

# 4. Asia's disaster resilience and risk management over the last 50 years

- The approach to disaster management has evolved through the years.




DRR= Disaster risk reduction, SDG=Sustainable Development Goal

Source: Mechler, R., and S. Hochrainer-Stigler. 2019. Generating Multiple Resilience Dividends from Managing Unnatural Disasters in Asia: Opportunities for Measurement and Policy. *ADB Economics Working Paper Series* No. 601.

# 4. Asia's disaster resilience and risk management over the last 50 years

- From 1994 to 2015, three important global frameworks for disaster risk management were adopted in Japan. Recent major international agreements for development have also factored in disaster and climate risk in addressing development challenges.

**1994**

**Yokohama Strategy**

In 1994, the first World Conference on Disaster Reduction adopted the Yokohama Strategy for a Safer World, which set out landmark guidelines for disaster prevention, preparedness, and mitigation.

**2005**

**Hyogo Framework for Action (HFA)**

The HFA, adopted at Kobe in 2005, emphasizes the strengthening of institutions and capacities to build disaster resilience. It calls for placing disaster risk management as a national and a local priority with a strong institutional basis for implementation (UNISDR, 2005).

**March 2015**

**Sendai Framework**

The Sendai Framework was adopted by 187 UN member states, providing countries with more concrete actions to build resilience and reduce disaster risk. It emphasized four key goals: (1) understanding disaster risk; (2) strengthening disaster risk governance; (3) investing in disaster risk reduction; and (4) enhancing disaster risk preparedness.

**September 2015**

**Sustainable Development Goals (SDGs)**

SDG 13 calls for taking urgent action to combat climate change by strengthening disaster resilience and adaptive capacity; integrating climate change measures into policy and planning; and building knowledge to address climate change and capacity for planning and management.

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**December 2015**

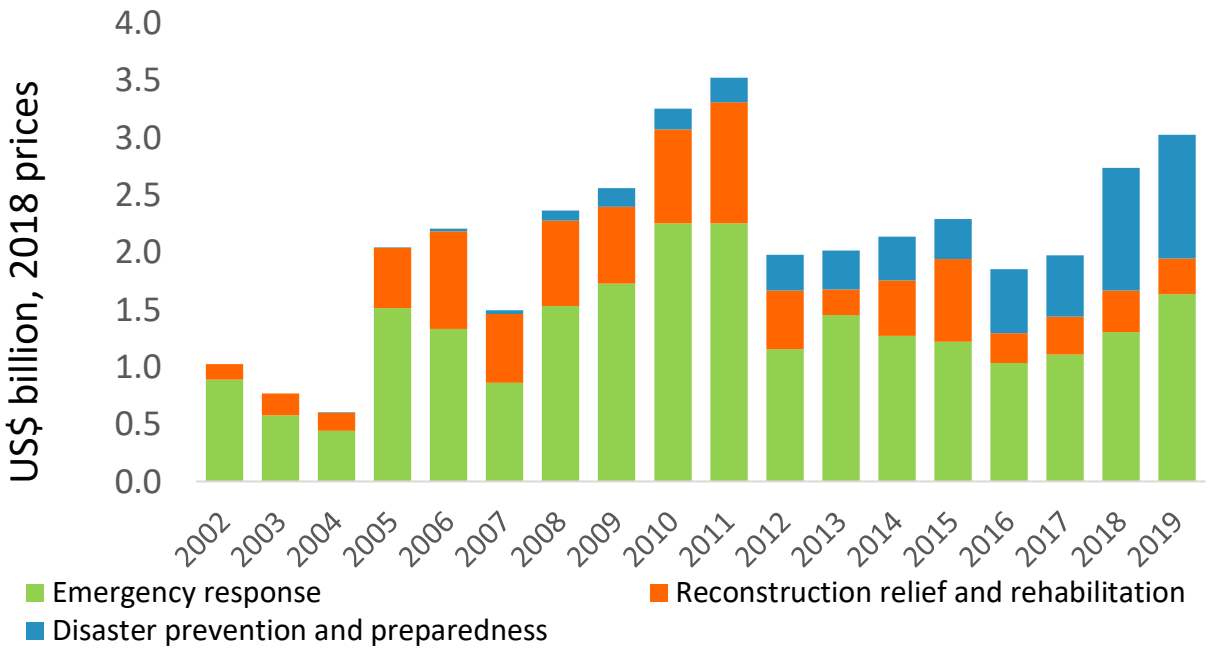
**Paris Agreement**

In 2015, the Paris agreement was adopted at the 21st Conference of the Parties (COP21) to the UN Framework Convention on Climate Change by 196 state parties to tackle climate change and its negative impacts.

# 4. Asia's disaster resilience and risk management over the last 50 years

- Global commitment to disaster risk reduction (DRR) has progressed as evidenced by rising share of disaster prevention and preparedness (as % of total humanitarian aid), increasing integration of DRR in planning and investment infrastructure, and widening of options for insurance and non-insurance mechanisms.

**Humanitarian Aid to Developing Asia, 2002–2019**




Source: Organisation for Economic Co-operation and Development. Humanitarian Assistance. http://www.oecd.org/dac/stats/humanitarian-assistance.htm. Accessed 28 January 2021.

**Insurance and non-insurance mechanisms**

Credit transactions (through banks and other financial institutions), agriculture insurance, microinsurance, disaster insurance, and catastrophe bonds.

Nonmarket-based insurance mechanisms include those from the government (e.g., cash transfers, food and other in-kind transfers, and free primary health care), bilateral and multilateral aid resources, self-insurance, and informal support networks and mechanisms.

# 4. Asia's disaster resilience and risk management over the last 50 years

- To strengthen resilience, governments and stakeholders should adopt a risk-layered approach to disaster risk financing. This can aid governments in selecting the right mix of instruments to improve financial preparedness.

  - ❖ For the lowest layer of most frequent, least damaging events, these instruments include ex-ante contingency budget lines, reserves, ex-post budget reallocations, and loans.

  - ❖ International assistance (including contingent disaster financing) is often tapped by governments for the top layer of risk associated with the most destructive catastrophes.

  - ❖ **Meanwhile, the medium layer of risk is suitable for transfer through disaster insurance, which is spreading rapidly across the region.**

**Layered approach to disaster risk financing**


- ❑ Disaster risk cannot be eliminated entirely
- ❑ Risk retention vs. transfer

*Source:* Surminski, S., A. Panda, and P. Lambert. 2019. Disaster Insurance in Developing Asia: An Analysis of Market-Based Schemes. ADB Economics Working Paper No. 509. Manila: Asian Development Bank.

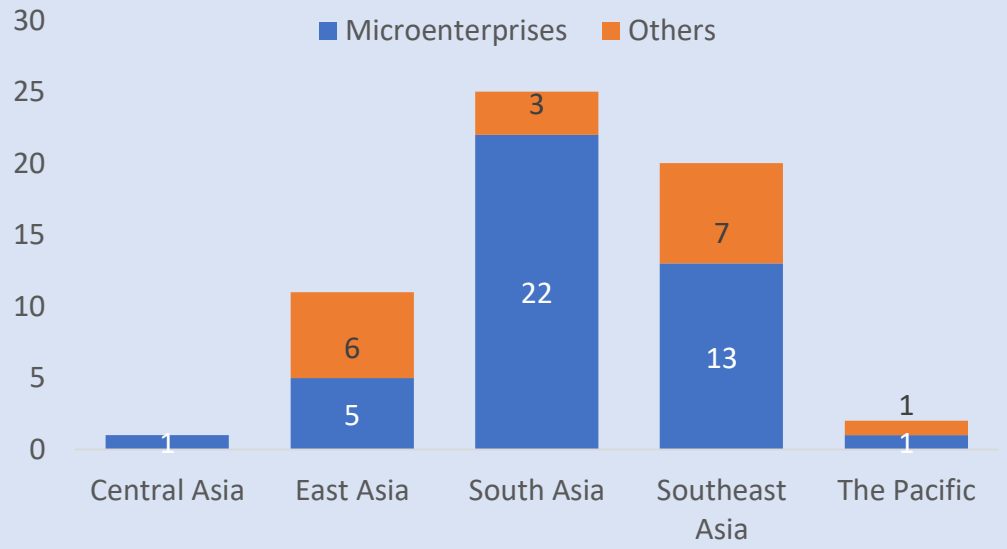
# 4. Asia's disaster resilience and risk management over the last 50 years

- Only a limited proportion of economic losses caused by disasters, however, have been covered by insurance.

**Share of economic losses insured by income level, selected Asian economies, 2010–2019**


Note: Economies included in this chart are members of the Asia-Pacific Economic Cooperation.
Source: Adapted from ADB. 2020. *Leveraging Technology and Innovation for Disaster Risk Management and Financing.*

**Number of disaster insurance schemes in Asia, 2018**




- ❑ Still limited: only 8% of losses are insured
- ❑ 80% of insurance programs are subsidized

*Source:* Surminski, S., A. Panda, and P. Lambert. 2019. Disaster Insurance in Developing Asia: An Analysis of Market-Based Schemes. ADB Economics Working Paper No. 509. Manila: Asian Development Bank.

# 4. Asia's disaster resilience and risk management over the last 50 years

- Despite the progress in disaster risk management in Asia, more work needs to be done.

**1**

The global community and national and local governments should increase its allocations for ex-ante disaster risk management. Since records began in 2002, the largest share of humanitarian aid has always gone to emergency response efforts.

**3**

Planning and investing in climate-friendly and disaster-resilient infrastructure---taking into account disaster risks in the location, design, construction, and implementation of an infrastructure project—can be a cost-effective way to reduce disaster risks.

**2**

There is a strong need to bolster insurance mechanisms to diversify countries' risks from disasters.

In developing economies around the world, more than 95% of disaster costs from weather- and climate-related hazards were not covered by insurance.

# 4. Asia's disaster resilience and risk management over the last 50 years

- Recent thinking on disaster risk management has also emphasized *rebuilding better*, the idea that disaster recovery, rehabilitation, and reconstruction can be implemented in a way that affected areas become more resilient than they were before a disaster.

This can happen through "integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment."

**Goals of *rebuilding better***

**Safety** – the avoidance of mortality, through stronger and safety-equipped infrastructure or through softer approaches (e.g., planting mangroves before a storm or migrating out of disaster-prone areas).

**Speed of recovery** – through swift, efficient, and decisive implementation of well-designed post-disaster actions.

**Fairness and inclusivity** – by ensuring fair processes and outcomes.

**Opportunity** – by bringing back economic activity and creating employment in affected areas.

# Outline

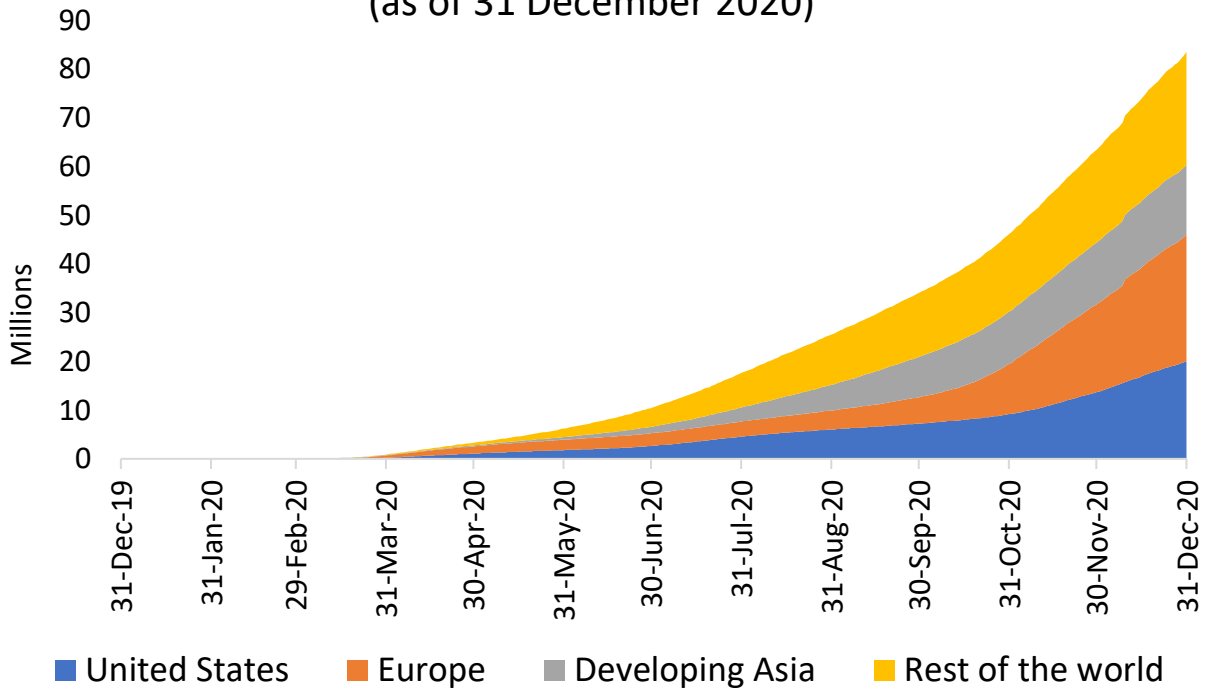
## Part II: The COVID-19 Disaster

5. COVID-19—A global health crisis
6. Economic impacts
7. Government responses
8. Looking ahead
9. Questions and further readings

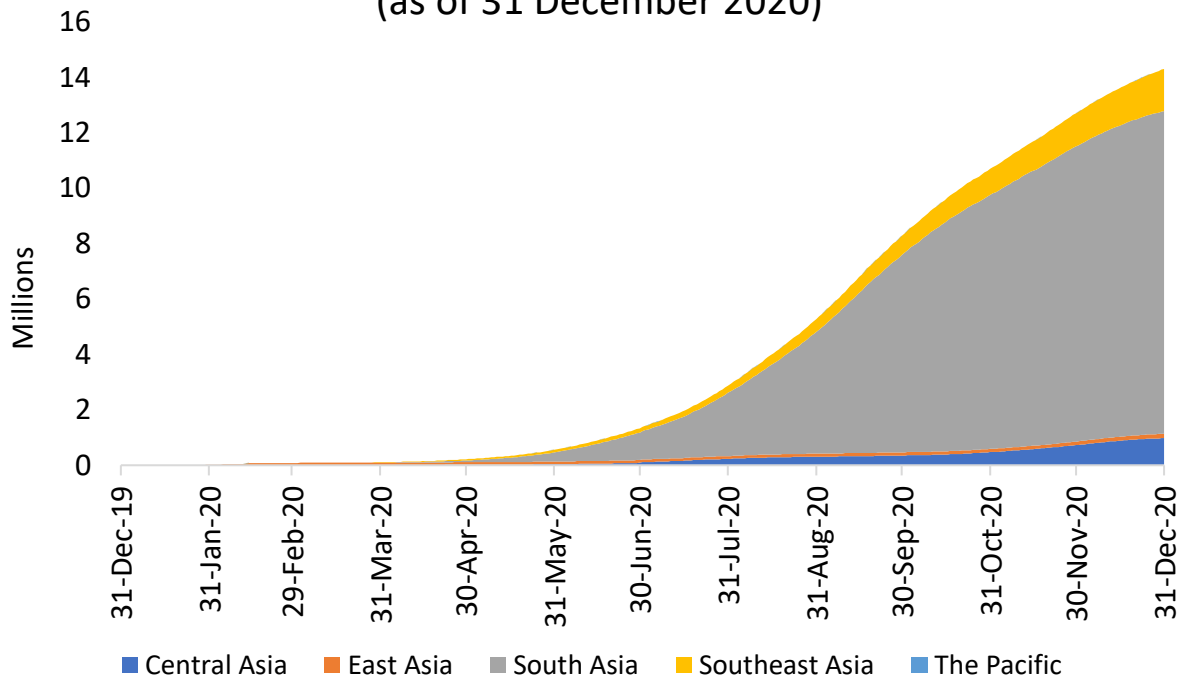
# 5. COVID-19—A global health crisis

- The coronavirus disease (COVID-19) pandemic has evolved to become one of the most catastrophic events in history, spreading to every continent in the world. The number of cases continues to rise, both globally and within developing Asia.

**Cumulative Global Cases by Region**
(as of 31 December 2020)




**Cumulative Developing Asia Cases by Subregion**
(as of 31 December 2020)




Source: Roser, M., et al. 2020. Coronavirus Pandemic (COVID-19). Published online at OurWorldInData.org. Retrieved from: https://ourworldindata.org/coronavirus on 18 January 2021.

# 6. Economic impact

- The economic impact of the pandemic remains significant. ADB's December 2020 economic impact assessment estimated the extent of worldwide losses to be between $4.8 trillion and $7.4 trillion in 2020 and between $3.1 trillion and $5.4 trillion in 2021.

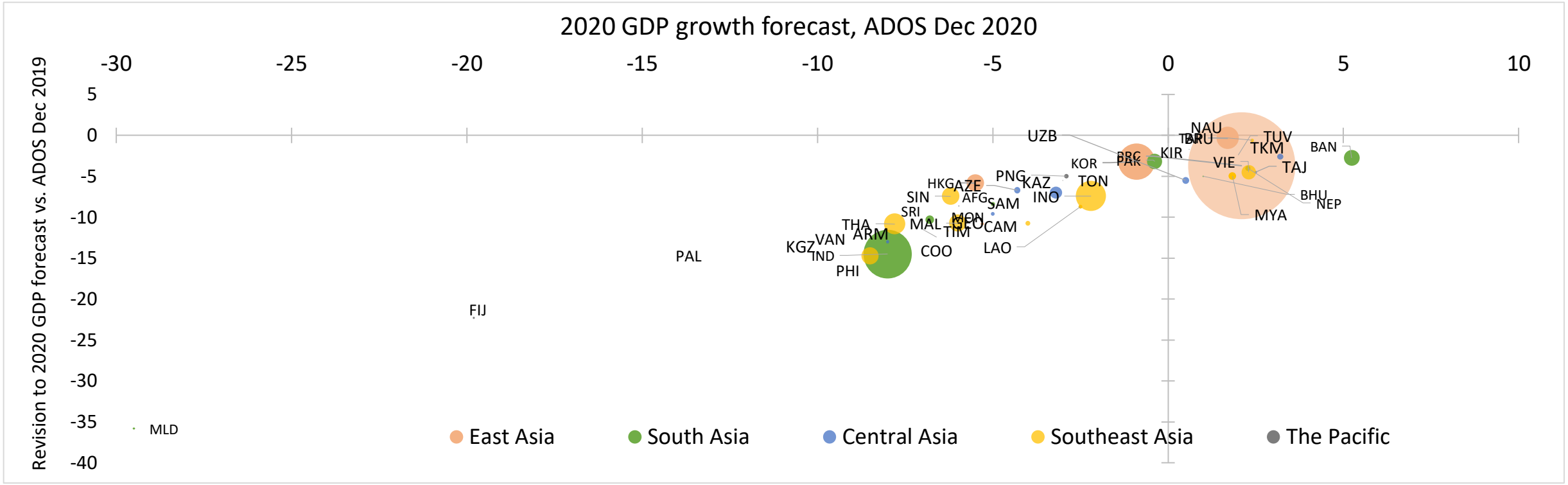
**Estimated Global and Regional Losses Due to COVID-19**
(relative to a no–COVID-19 baseline)

| | 2020 | | | | | | 2021 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GDP (%) | | | GDP loss ($ billions) | | | GDP (%) | | | GDP loss ($ billions) | | |
| | Better | Baseline | Worse | Better | Baseline | Worse | Better | Baseline | Worse | Better | Baseline | Worse |
| World | -5.5 | -7.2 | -8.7 | 4,757 | 6,165 | 7,441 | -3.6 | -4.9 | -6.3 | 3,108 | 4,234 | 5,407 |
| Developing Asia | -6.0 | -7.8 | -9.5 | 1,394 | 1,818 | 2,211 | -3.6 | -4.9 | -6.3 | 844 | 1,148 | 1,470 |
| Central Asia | -9.3 | -11.9 | -14.2 | 34 | 43 | 51 | -6.2 | -8.6 | -11.1 | 23 | 31 | 40 |
| East Asia | -4.6 | -6.0 | -7.4 | 761 | 999 | 1,223 | -2.4 | -3.3 | -4.2 | 402 | 547 | 698 |
| Southeast Asia | -8.6 | -10.9 | -12.7 | 253 | 320 | 374 | -6.1 | -8.4 | -11.0 | 178 | 246 | 322 |
| South Asia | -10.0 | -13.2 | -16.3 | 343 | 453 | 560 | -7.0 | -9.4 | -11.8 | 240 | 322 | 406 |
| The Pacific | -7.0 | -8.7 | -9.6 | 2 | 3 | 3 | -3.8 | -5.6 | -7.8 | 1 | 2 | 3 |
| United States | -4.9 | -6.4 | -7.8 | 1,038 | 1,349 | 1,634 | -3.3 | -4.5 | -5.8 | 696 | 947 | 1,212 |
| Europe | -7.9 | -10.2 | -12.2 | 1,488 | 1,913 | 2,285 | -5.1 | -7.0 | -9.0 | 956 | 1,311 | 1,697 |
| Rest of the World | -3.6 | -4.6 | -5.6 | 836 | 1,084 | 1,310 | -2.6 | -3.5 | -4.4 | 612 | 828 | 1,027 |

Source: Abiad, A., et.al. 2020. The Impact of COVID-19 on Developing Asia: The Pandemic Extends into 2021. ADB Brief No. 159. Manila: Asian Development Bank.

# 6. Economic impact

- Uncertainty surrounding the depth and duration of the pandemic was dimming economic prospects.




AFG = Afghanistan; ADO = Asian Development Outlook; ADOS = ADO Supplement; ARM = Armenia; AZE = Azerbaijan; BAN = Bangladesh; BHU = Bhutan; BRU = Brunei Darussalam; CAM = Cambodia; COO = Cook Islands; FIJ = Fiji; FSM = Federated States of Micronesia; GDP = gross domestic product; GEO = Georgia; HKG = Hong Kong, China; IND = India; INO = Indonesia; KAZ = Kazakhstan; KGZ = Kyrgyz Republic; KIR = Kiribati; KOR = Republic of Korea; LAO = Lao People's Dem. Rep.; MAL = Malaysia; MLD = Maldives; MON = Mongolia; MYA = Myanmar; NAU = Nauru; NEP = Nepal; PAK = Pakistan; PAL = Palau; PHI = Philippines; PNG = Papua New Guinea; PRC = People's Republic of China; RMI = Marshall Islands; SAM = Samoa; SIN = Singapore; SOL = Solomon Islands; SRI = Sri Lanka; TAJ = Tajikistan; TAP = Taipei,China; THA = Thailand; TIM = Timor-Leste; TKM = Turkmenistan; TON = Tonga; TUV = Tuvalu; UZB = Uzbekistan; VAN = Vanuatu; VIE = Viet Nam.
Note: Bubble size indicates the value of 2019 nominal GDP.
Source: *Asian Development Outlook* database.

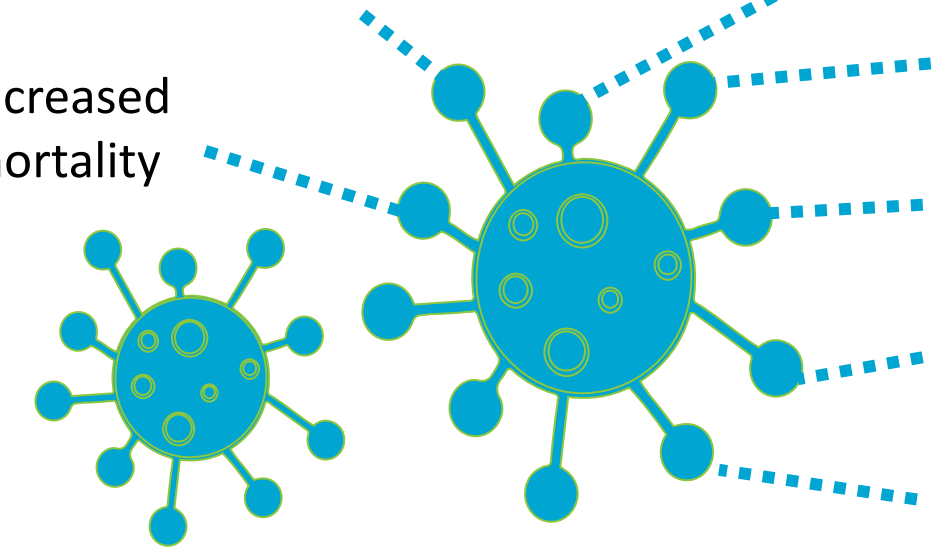
# 6. Economic impact

- The ongoing COVID-19 outbreak affected economies through numerous channels.

**Health effects**

Increased morbidity

Increased mortality



**Economic effects**

Sharp declines in domestic consumption → severe declines in business sales and investment spending declines

Cessation in tourism and business travel due to border closures

Spillovers of weaker demand to other sectors and economies through trade and production linkages

Supply-side disruptions to production and trade

Demand-side shocks spilling over through trade and production linkages

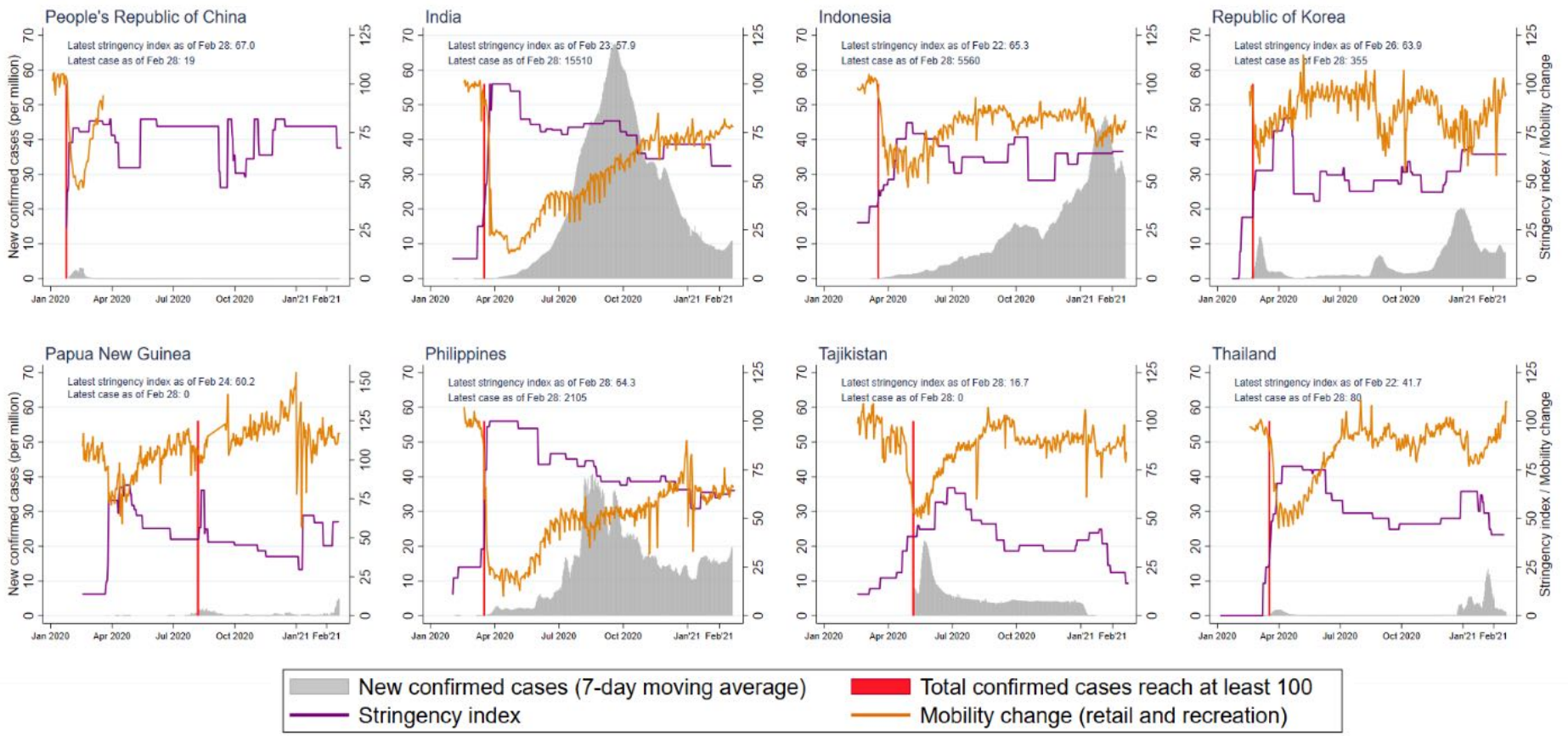
# 6. Economic impact

- Measures to contain COVID-19 has undercut developing Asia's domestic demand.

Stringency index and mobility decline have been high in South Asia and Central Asia and low in East Asia.

While there is a general tradeoff between health outcome and economic level, this tradeoff is avoidable (e.g., Republic of Korea's case)

**COVID-19 Cases, Stringency of Control and Mobility for Selected Economies**

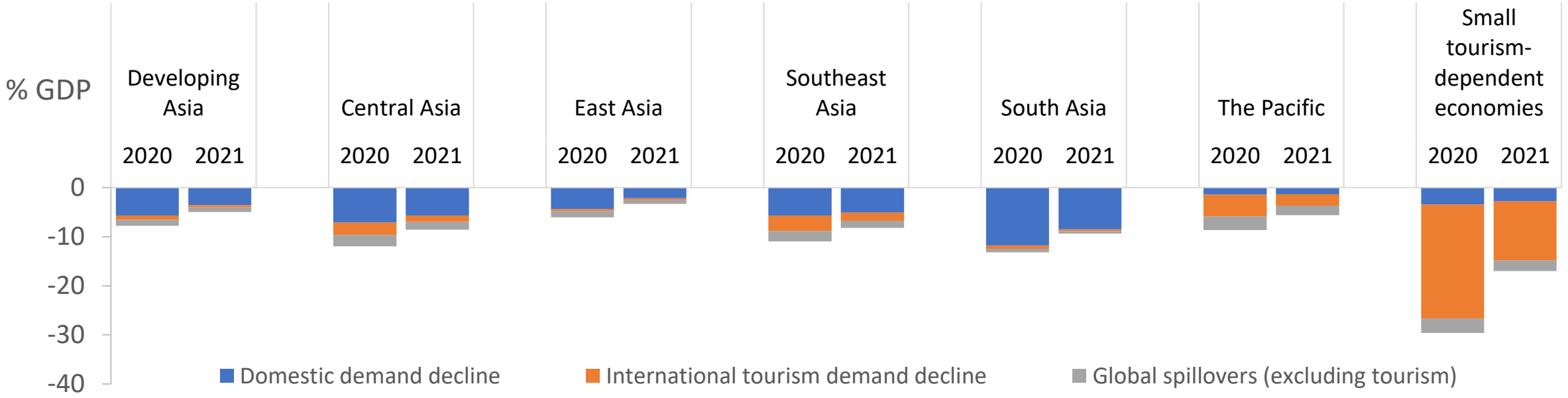



Notes: Confirmed cases (per million population) on the left axis; stringency of control and mobility change indexes on the right axis. For the PRC, mobility change data cover PRC outside Hubei until March 15.
Sources: Mobility change data: Google COVID-19 Community Mobility Reports (except for PRC: He, Z., et al. 2020. Preliminary Estimates of Economic Effect of Lockdown in China. COVID-19 Thematic Report No.1. Chinese University of Hong Kong – Tsinghua University Joint Research Center for Chinese Economy.); COVID data: OurWorldInData; Stringency of control index data: Hale, T., et al. 2020. Oxford COVID-19 Government Response Tracker. Blavatnik School of Government.

# 6. Economic impact

- The pandemic impacts (domestic demand decline, international tourism decline, and global spillovers) have been felt across developing Asian subregions. Impact has also been large for small tourism-dependent economies.

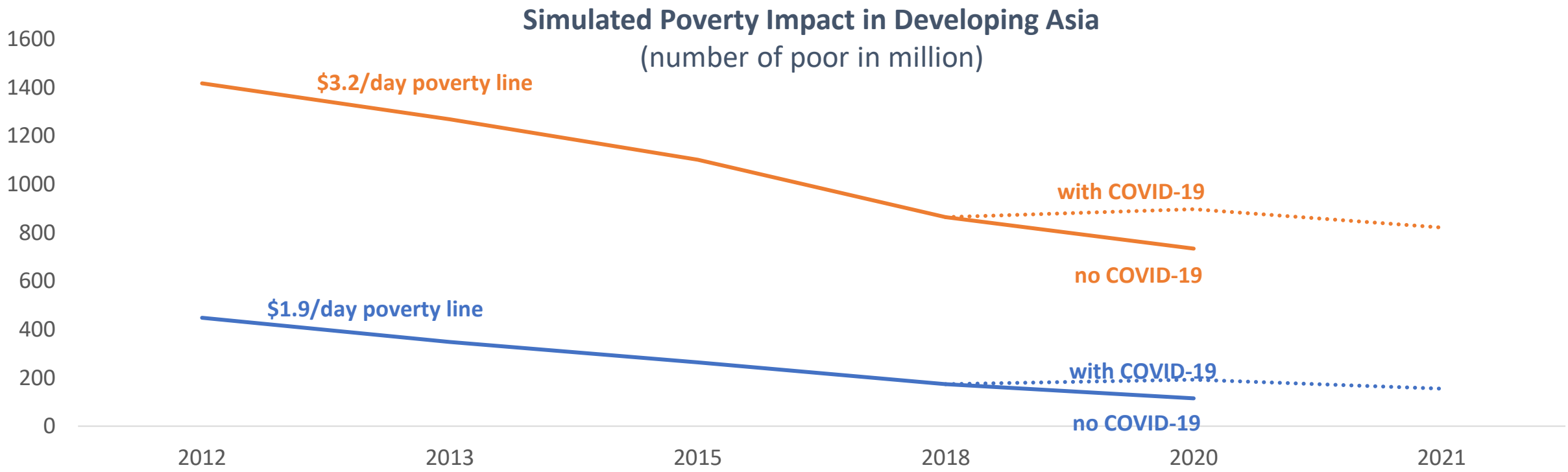
**COVID-19 Estimated Impact on Developing Asian Economies**
(% of GDP)




Note: Small tourism-dependent economies include Maldives, Cook Islands, Palau, Vanuatu, and Fiji.
Source: Abiad, A., et.al. 2020. The Impact of COVID-19 on Developing Asia: The Pandemic Extends into 2021. ADB Brief No. 159. Manila: Asian Development Bank.

# 6. Economic impact

- The crisis could reverse years of progress toward eliminating poverty in developing Asia.

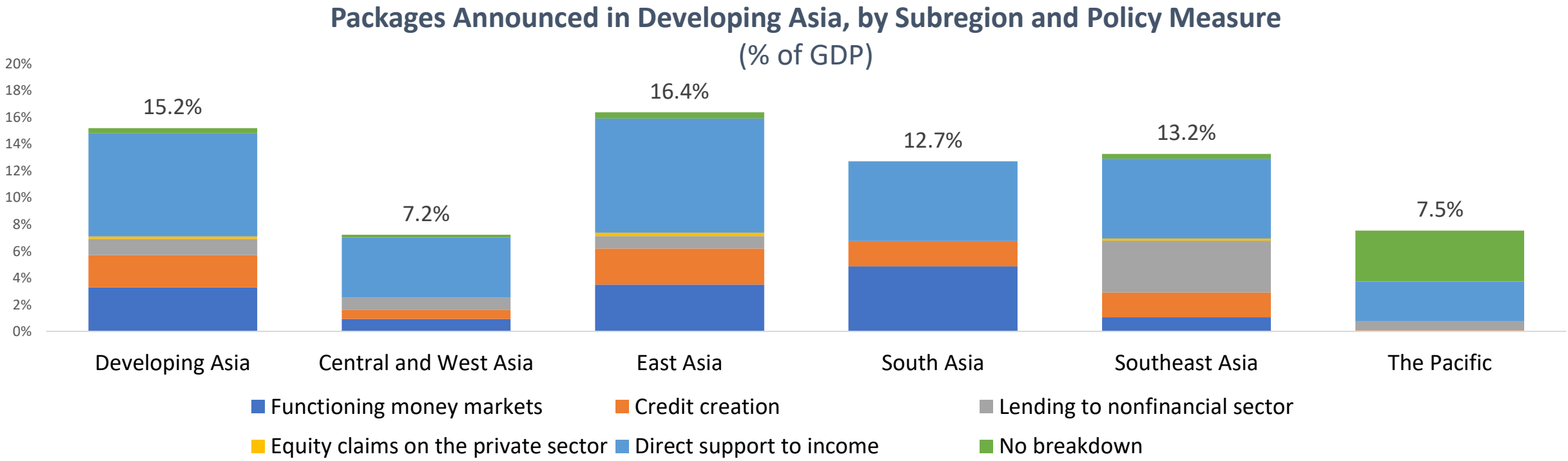



Notes: Developing Asia refers to the average of 34 ADB developing members. For 2018, India's estimates were based on extrapolations using World Bank's model-based mean per capita expenditure in 2015, GDP per capita growth rates between 2015 and 2018, and distribution based on the 2011–2012 household consumption survey.

Source: Bulan, J., R. Hasan, A. Martinez, and I. Sebastian. 2020. "COVID-19 and Poverty: Some Scenarios." Unpublished note prepared for the Economic Research and Regional Cooperation Department, Asian Development Bank. Manila.

# 7. Government responses

- Governments around the world have taken steps to mitigate the economic impacts. Nevertheless, the extent of policy packages has been uneven across developing Asia.




GDP = gross domestic product

Notes: Data as of 11 January 2021. Sources: ADB COVID-19 Policy Database, accessed on 16 January 2021. For the database, see Felipe, J. and S. Fullwiler. 2020. ADB COVID-19 Policy Database: A Guide. *Asian Development Review* 37(2): 1–20.

# 7. Government responses

- ADB is supporting developing members' pandemic responses with finance, knowledge, and partnerships.

**Summary of ADB's Approved Projects in Support of Developing Member Countries' COVID-19 Response, 2020**

($ million)

| Item | ADB | Cofinancing | Total |
|---|---|---|---|
| Sovereign operations | 13,280 | 8,187 | 21,467 |
| Nonsovereign operations | 448 | 158 | 606 |
| Trade Finance, Supply Chain Finance, and Microfinance Programs[b] | 2,419 | 2,496 | 4,915 |
| Total | 16,147 | 10,841 | 26,988 |

ADB = Asian Development Bank, COVID-19 = coronavirus disease.

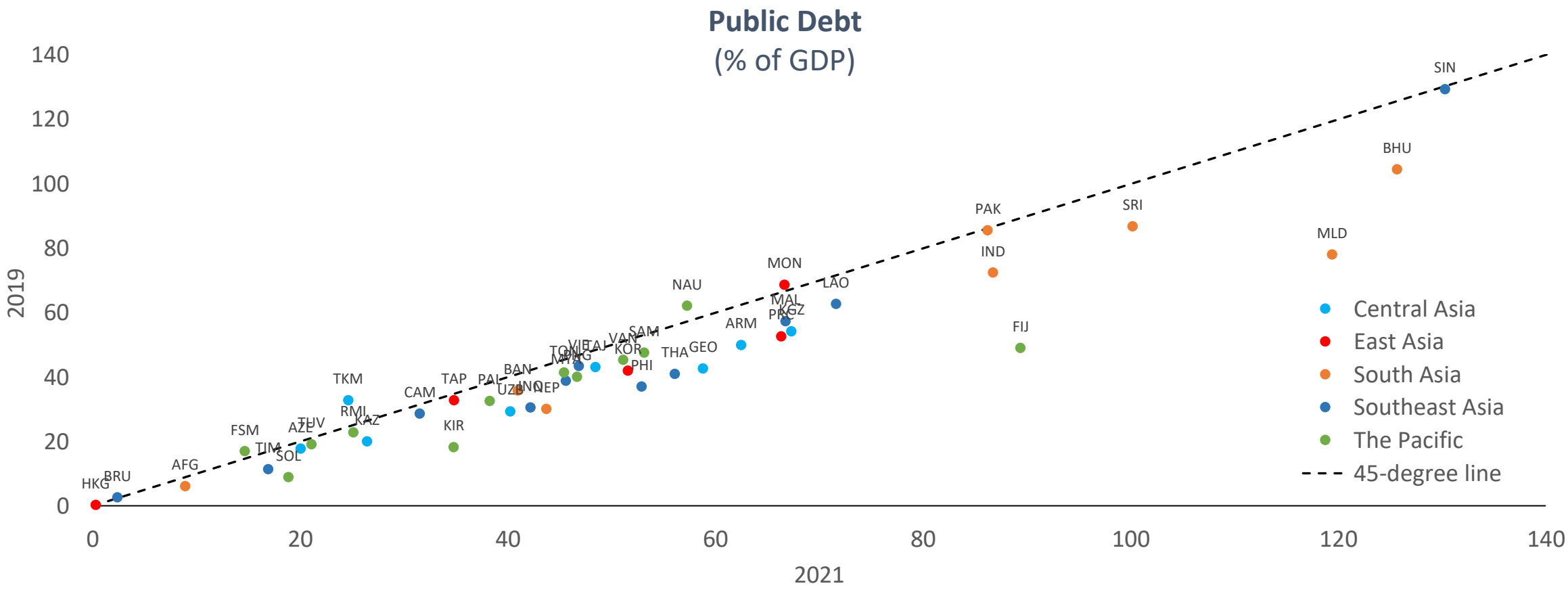
[a] Commitment is the financing approved by the ADB Board of Directors or Management for which the legal agreement has been signed by the borrower, recipient, or the investee company and ADB. It is the amount indicated in the investment agreement that may or may not be equal to the approved amount, depending on the exchange rate at the time of signing. In the case of official and commercial cofinancing not administered by ADB for which the signed amount is not readily available, the approved amount is used.

[b] The Trade Finance Program represents 92% of the ADB figure and supported 7,178 transactions in the reporting period, with an average maturity of 159 days.

Source: Extracted from Asian Development Bank. 2021. *Annual Report 2020*. Manila.

# 7. Government responses

- COVID-19 responses are putting a strain on governments' fiscal positions.




Source: Ferrarini, B., et al. 2021. Asia Sovereign Debt Monitor. Manila: Asian Development Bank (forthcoming).

# 8. Looking Ahead

- While in the last 50 years, developing Asia has achieved much progress in the design and implementation of strategies for the abatement of risks stemming from natural hazards, several challenges remain.

1. First, higher **spending on disaster prevention and preparedness** (instead of disaster response) can potentially provide multiple development benefits even in normal times (e.g., tsunami shelters as classrooms or community centers).
2. Second, carefully **planning, designing, and investing in climate-resilient and disaster-resilient infrastructure** from the beginning dramatically reduces the exposure and vulnerability to disaster risk (from both frequent and rare events).

3. Third, **insurance mechanisms** in developing Asia need to be made more broadly available and accessible.
4. Fourth, it is important to **engage the community** in planning for disaster reduction, response, and recovery. The action of the community, as first responders to disasters, should complement national efforts.
5. Fifth, comprehensive planning and strategies for reconstruction—**rebuilding better**—stresses the safety, timeliness, inclusion, climate resilience, and the full realization of economic potential.
6. Finally, disaster recovery should apply **new technologies and innovations** to be inclusive and equitable across all segments of society, particularly the most vulnerable and disadvantaged.

# 9. Questions and further readings

- **Questions – Part I: Disasters**

**01** What are some salient trends in disaster risk in Asia over the last 50 years? What are the most common types of disasters in the region? Which have brought most deaths?

**02** What are the short-term and long-term effects of disasters in Asia? Why are some effects of disasters short-term? Why are others long-term and pervasive?

**03** What are the drivers of disaster risk in Asia? How are poverty, income, and disaster risk interrelated?

**04** How has disaster risk management in Asia evolved over the years? Explain the concept of "rebuilding better." What are the remaining challenges for disaster risk management in Asia?

# 9. Questions and further readings (cont.)

- **Questions – Part II: The COVID-19 Disaster**

**05** What are the multiple channels through which COVID-19 are affecting developing Asia? What are the economic effects of the pandemic?

**06** What are the lingering effects? Which sectors in developing Asia are particularly vulnerable to the effects of COVID-19?

**07** How have governments differed in responding to the pandemic? Which policies have been effective in mitigating the economic effects of the virus?

**08** How can governments and affected sectors move beyond the pandemic and adapt toward the "new normal"?

# 9. Questions and further readings (cont.)

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# 9. Questions and further readings (cont.)

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# Thank you!

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