



Financing Green Infrastructure through Climate Resilience Funding in Asia

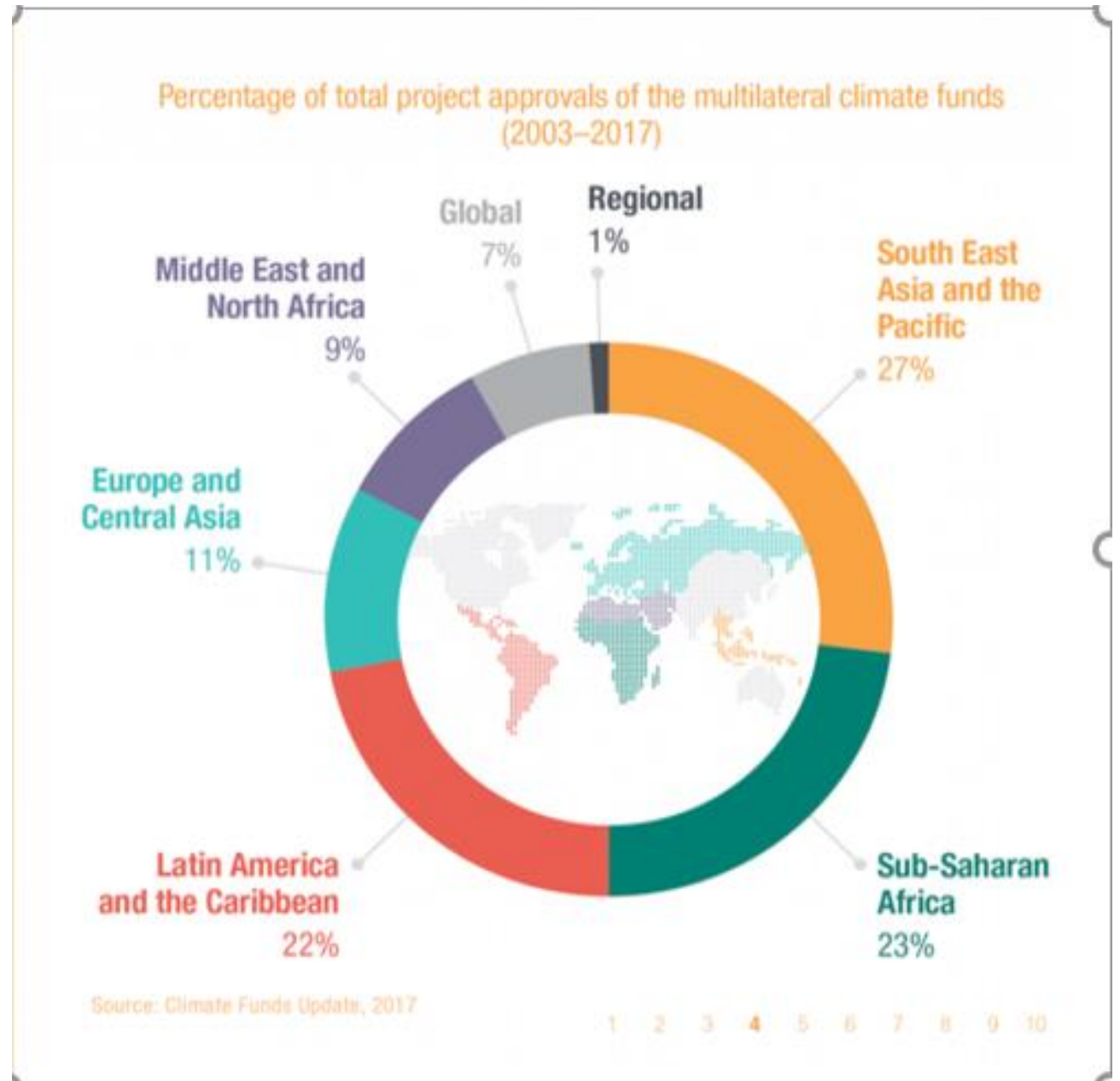
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Asia Focus - Innovative Financing to Protect
Ecosystems and Promote Nature
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Asia Awakening to Climate Resilience

- **Japan's** weather agency declared a heat wave in July 2018. Also hit by record high rainfall and extensive flooding and mudslides.
- **In the Southern State of Kerala in India,** floods have left more than 320 people dead and more than 220,000 displaced.
- Scientists have claimed **China's north plain,** one of the most densely populated regions on Earth, is set to become the world deadliest heatwave zone by 2070.



Asia Accounts
for 1/3 of
climate fund
approvals



Investment potential by country and sector in South Asia, 2018–2030

	Bangladesh	Bhutan	India	Maldives	Nepal	Sri Lanka	Total
Renewable energy	\$3.2 billion	\$72 million	\$403.7 billion	\$55 million	\$2.1 billion	\$2.3 billion	\$411.4 billion
Large hydro	-	\$10.6 billion	\$1.1 billion	-	\$22.5 billion	\$190 million	\$107.3 billion
Green buildings	\$118.8 billion	\$390 million	\$1.4 trillion	\$200 million	\$3.4 billion	\$8.4 billion	\$1.53 trillion
Transport infrastructure	\$23.7 billion	\$615 million	\$250 billion	\$1.5 billion	\$10 billion	\$326 million	\$286.1 billion
Transport electric vehicles	-	\$322 million	\$667 billion	-	\$2.5 billion	-	\$669.8 billion
Municipal solid waste	\$4 billion	\$11.5 million	\$11 billion	\$46 million	\$83 million	\$3.5 billion	\$18.6 billion
Climate-smart urban water	\$13 billion	\$106 million	\$128 billion	\$86 million	\$686 million	\$2.7 billion	\$144.6 billion
Climate-smart agriculture	\$9.1 billion	\$140 million	\$194 billion	\$31 million	\$4.8 billion	\$964 million	\$209 billion
TOTAL	\$171.8 billion	\$42.3 billion	\$3.1 trillion	\$1.9 billion	\$46.1 billion	\$18.4 billion	\$3.4 trillion





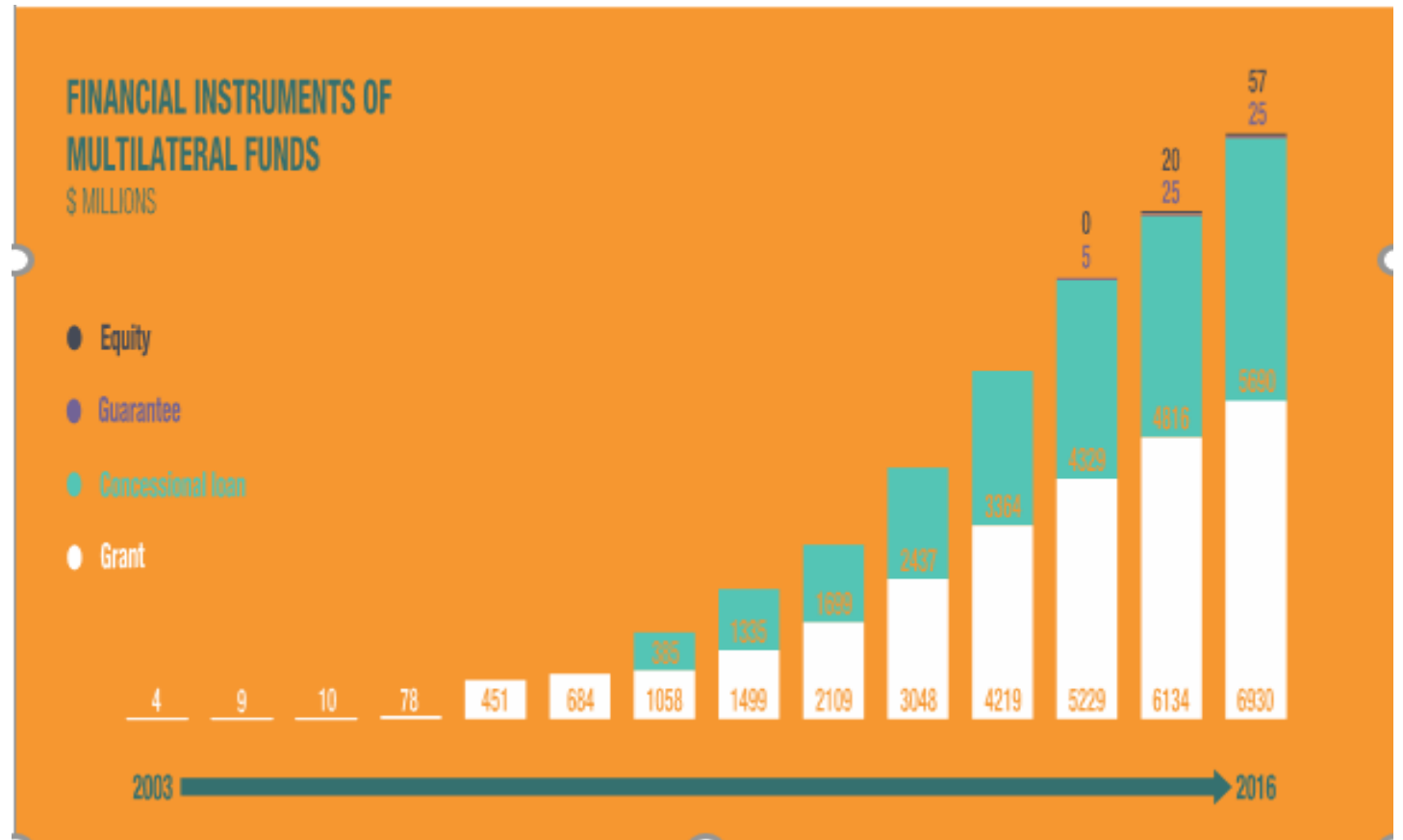
Today's Perplexity

A global stock-take of current climate finance sources indicates that today there are:

- 50 international public funds
- 60 carbon markets
- 6,000 private equity funds, and
- 99 multilateral and bilateral climate funds in operation.

Diversified Financial Instruments

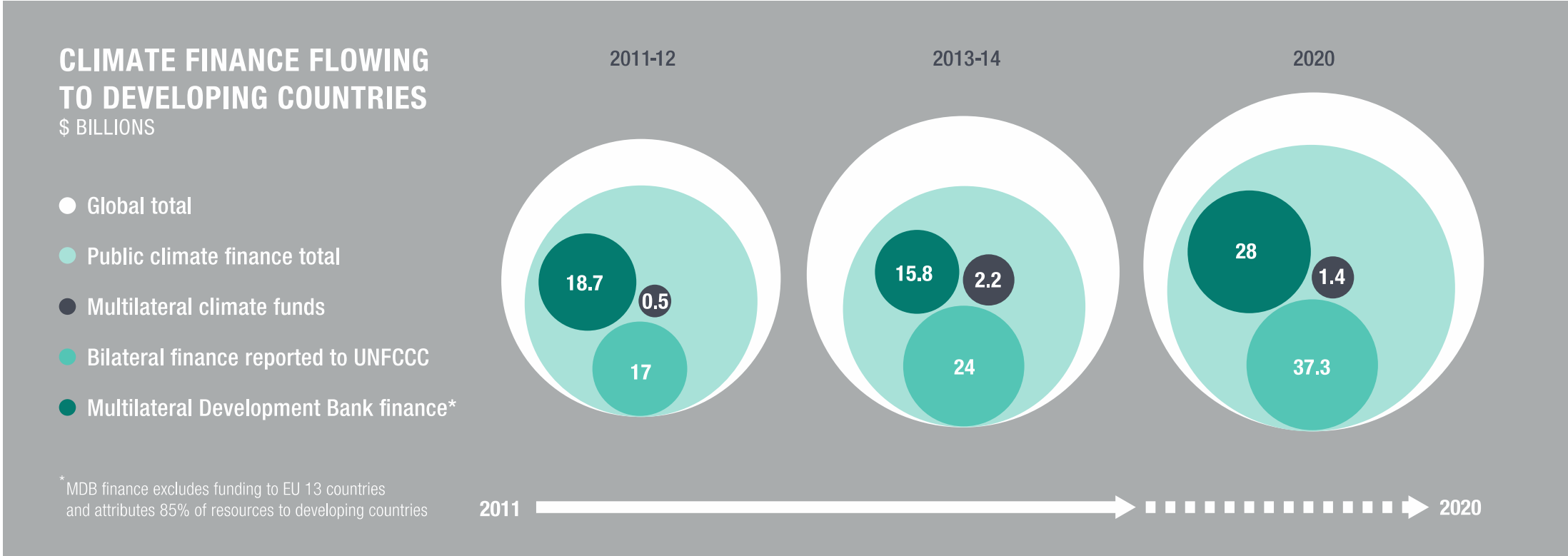
Climate funds largely offer grants and concessional loans, but the use of guarantees and equity investment is increasing.



Public Finance Leads the Way

1 PUBLIC CLIMATE FINANCE IS PREDICTED TO GROW BY 60% IN 2020

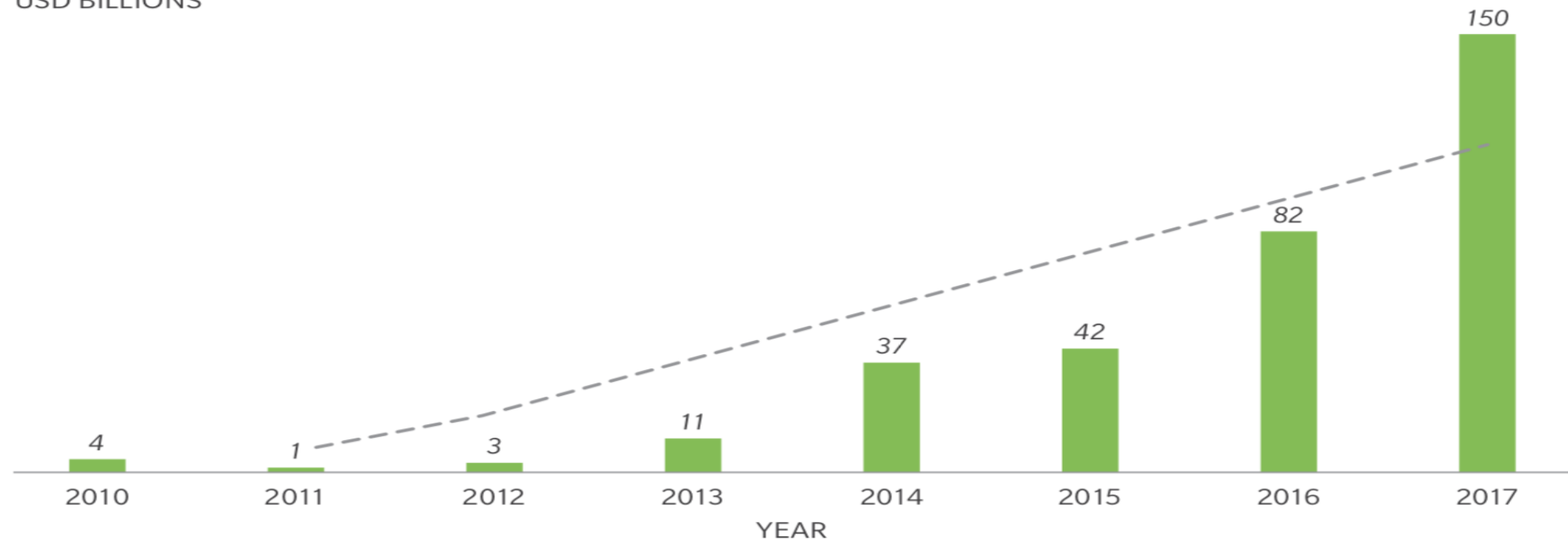
The total public climate finance developed countries report providing to developing countries is increasing. The 2016 Biennial Assessment estimates that close to \$42 billion a year was spent in developing countries.¹ The developed countries' road map towards making \$100 billion available to developing countries each year projects the amount of public climate finance to increase to \$67 billion in 2020.²



Green Bonds Gearing Up

Exhibit 1: Volume of green bonds issued since 2010

USD BILLIONS

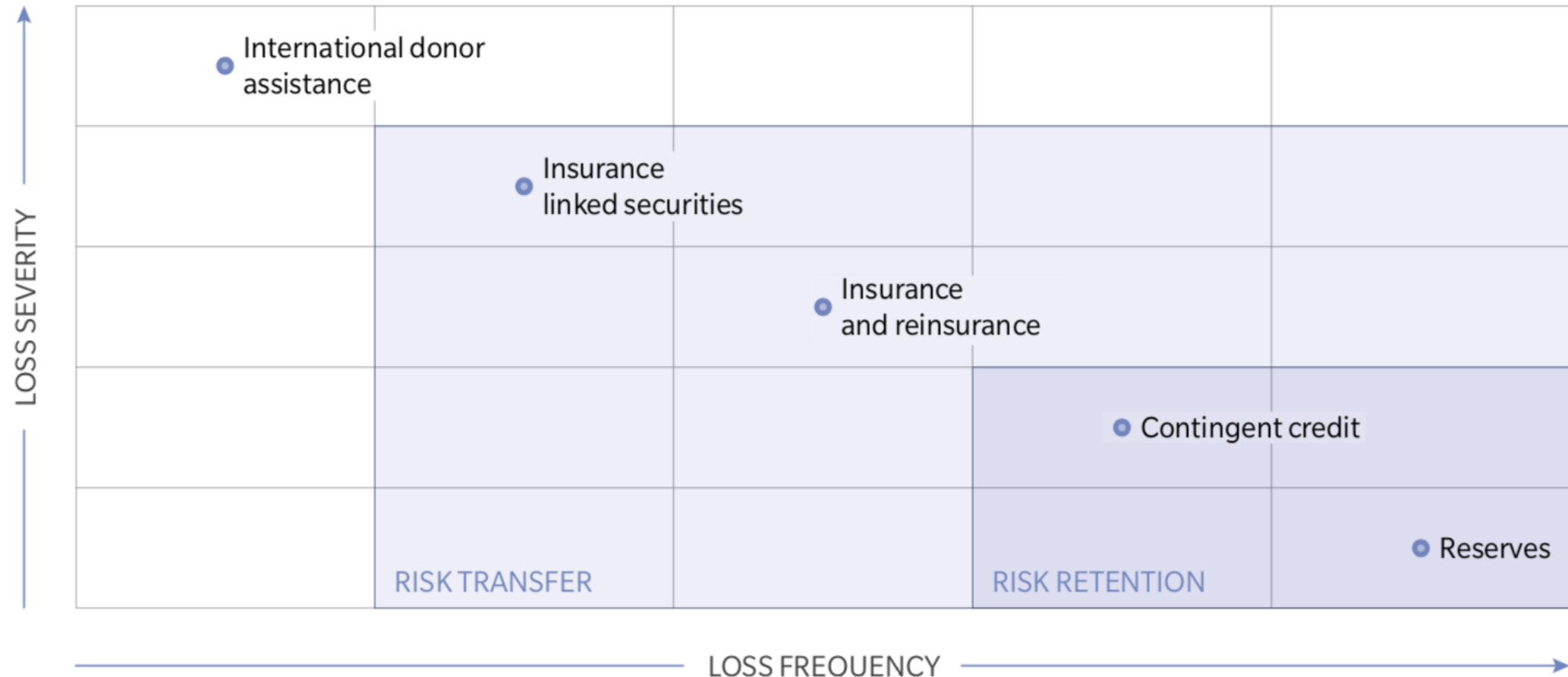


Source: Climate Bond Initiative

1 In collaboration with the Monetary Authority of Singapore and the United Nations Environment Program, the G20 Green Finance Conference was jointly organized by the Asia Securities Industry and Financial Markets Association (ASIFMA) and the Global Financial Markets Association (GFMA), and was held in Singapore on 15 Nov 2017.

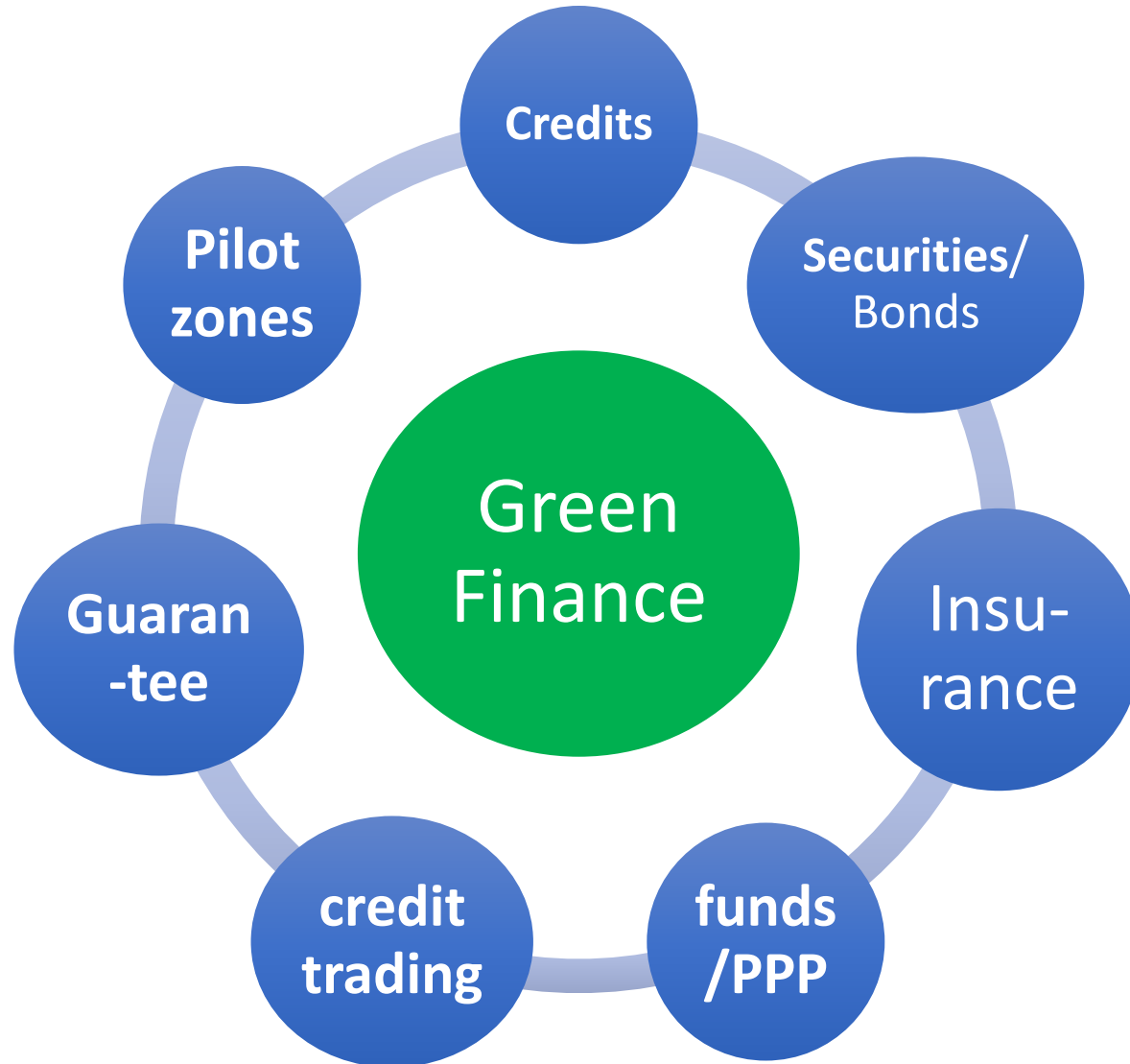
Climate Insurance: Key Role

Exhibit 2: Layering in action



Source: World Bank

China Greening Its Financial Sector



Singapore As ASEAN Green Finance Hub



- Singapore has a high rated (AAA) and stable credit profile, fiscal strength, competitive economy, and robust institutions.
- The banking sector is represented by 444 banks from all major regions. It also hosts 815 institutional investment funds and 361 re/insurers.
- With one of the most developed and open capital markets in Asia, Singapore's bond market attracts a diverse range of issuers, with over US\$221 billion in total local currency bonds outstanding, and an additional US\$53 billion of bonds
- Singapore's location in ASEAN and Asia allows the financial sector to service the needs of the region.



**GREEN
CLIMATE
FUND**

Shifting to low-emission sustainable development pathways through:

- Low-emission energy access and power generation
- Low-emission transport
- Energy efficient buildings, cities and industries
- Sustainable land use and forest management

Increasing climate-resilient sustainable development for:

- Enhanced livelihoods of the most vulnerable people, communities, and regions
- Increased health and well-being, and food and water security
- Resilient infrastructure and built environment to climate change threats
- Resilient ecosystems



Financial Measures

1) Green bond

ADB has raised €600 million to help finance climate change mitigation and adaptation projects with the issue of a 7-year green bond.

2) Climate fund

In 2016, ADB mobilized \$4.437 billion in total climate finance, with \$3.25 billion (73%) expected to contribute to mitigating climate change and \$1.187 billion (27%) to adaptation.



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

- Has committed to increasing climate financing to 28 percent of the Bank Group's portfolio by 2020.
- At current levels of co-financing, that would mean a potential \$29 billion a year for climate projects by 2020.
- The World Bank Group's Climate Change Action Plan lays out concrete steps to meet that commitment.



CLIMATE-SMART WATER INFRASTRUCTURE

- These water projects will generate opportunities for investors and companies that have specialized technology and expertise in the sector.
- State governments in India have signed agreements with private sector companies to build the country's first two sewage treatment plants using a hybrid annuity payment model in Haridwar and Varanasi, in support of the national priority to clean the Ganga river.
- Under this model, the government pays 40 percent of the project cost linked to construction milestones. The remaining 60 percent is paid over 15 years as annuities to the private operators along with operation and maintenance expenses.

The core values of AIIB is “Lean, Clean, and Green”



Example of Sri Lanka

- The proposed AIIB Sovereign-backed Loan is to co-finance with the World Bank.
- The preliminary estimates foresee a cost of US\$155 million, which will be the combined loan amount from the World Bank and AIIB.
- The project has the following components:
 - Flood Risk Mitigation Investments
 - Strengthening of Hydro-meteorological Services, Early Warning and Response Systems
 - Project Implementation and Monitoring

Funds	Date of Establishment	Commitment (billion USD)	Sector Focus	Geographic Focus
Silk Road Fund	2014	4.5	Infrastructure, energy, production capacity	Countries along OBOR, mainly Asia
China-ASEAN Investment Coop Fund	2009	10	Infrastructure, energy, natural resources	China, ASEAN
China-ASEAN Maritime Coop Fund	2011	0.5	Maritime economy, environmental conservation	China, ASEAN
Euro-Asian Coop				
China-Central and Eastern Europe Investment Coop Fund	2012	11.5	Infrastructure, energy, manufacturing, communications	Central and Eastern Europe
Russia-China Investment Fund	2012	1 (China) + 1(Russia)	Infrastructure, agriculture, natural resources	70% invested in Russia, 30% in China
South-South Climate Coop Fund	2015	3.2	Adaptation and mitigation	Developing countries
South-South Cooperation Assistance Fund	2015	2	No specific subject	Least developed countries, small island countries
Sino-US Green Fund (formerly China-US Building Energy Efficiency and Green	2016	3.05 (raised 1 st round)	Building energy efficiency, emission reduction, industrial structure upgrad	China (in cooperation with municipal governments)

Short-term Dilemma

- While the climate finance mobilized to the Asian countries vary greatly in form, quantity, and modalities, most of these finances are still delivered outside national budgetary systems through short-term projects.
- Developing countries have been highly critical of the ineffectiveness of this modality, claiming it as burdensome and insufficient to cover the cost of climate change efforts.
- Developing countries have also argued that the modality of short-term projects has further hampered their capacity-building efforts and institution-building capabilities.
- Other notable criticisms of using such a funding modality are that projects are not strongly nation-driven, are often biased towards donor needs and interests, and are generally unsustainable



Thanks