Climate change and the impact of private capital flows

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The Nature Conservancy – Colombia

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“Cutting across the mobilisation challenge [for climate change] is the need for the public and private sectors to work together for common objectives and with mutual respect. The public–private ‘culture gap’ can stand in the way of genuine efforts to collaborate and to creating conditions for each other’s success. It will take education, a spirit of humility – no one controls the solutions on their own – and a deepening of public–private initiatives…”

LSE and Grantham Research Institute, 2021.

Agenda

1. Climate Change and Nature Finance: Common challenges and opportunities
2. Making the business case for Nature-based Solutions: Sustainable cattle ranching
3. Water security: Drivers for increasing private investments

"The opinion expressed in this presentation is that of the author and do not necessarily reflect the views of The Nature Conservancy"

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2. Making the business case for Nature-based Solutions: Sustainable cattle ranching
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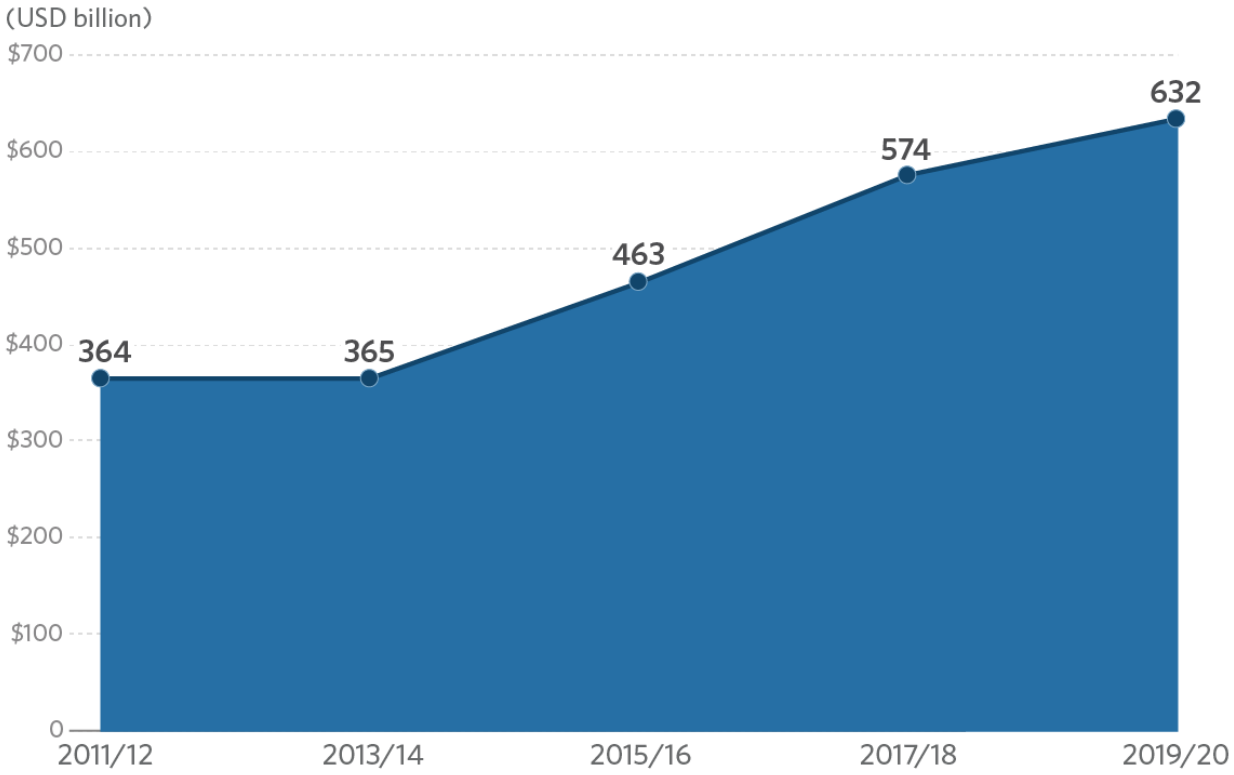
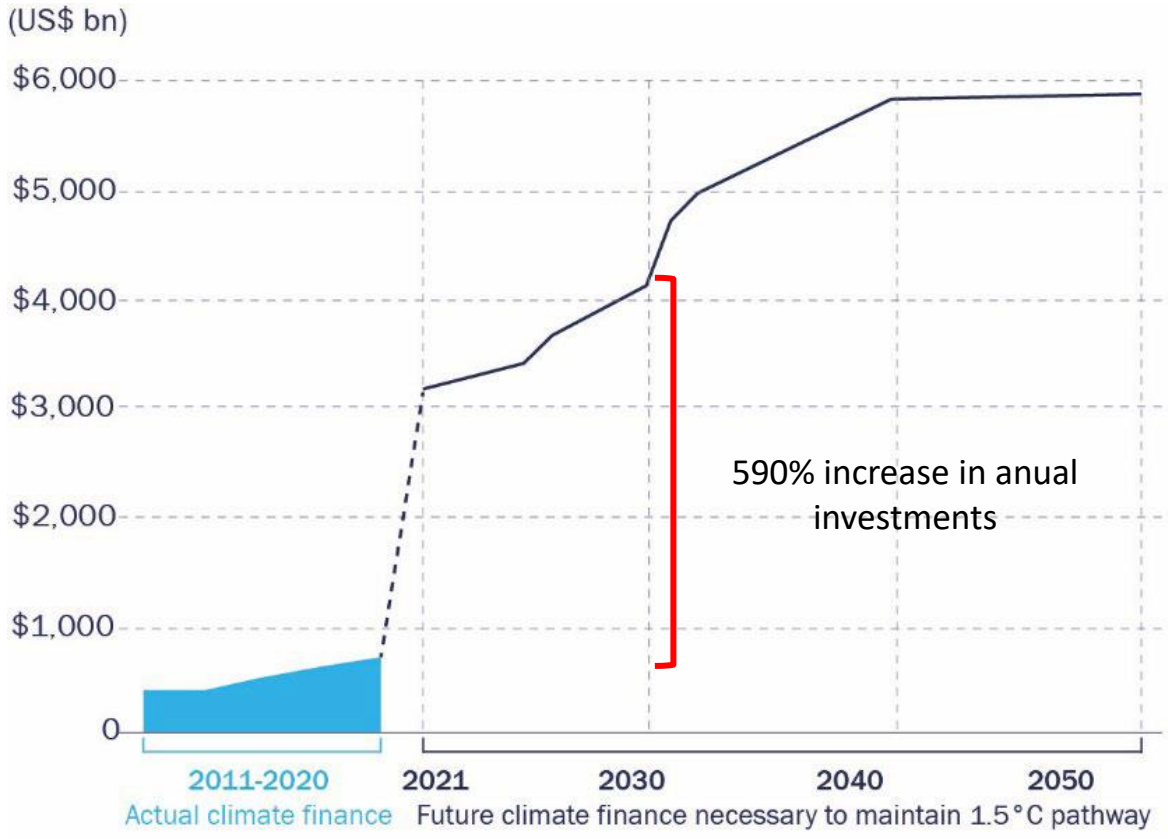
Global climate finance flows between 2011 –2020, biannual averages (USD billion)



Climate Change Financing GAP (USD billion)



"To meet climate objectives, by 2030 annual climate finance must increase by at least 590% to USD 4.35 trillion."

Source: Climate Policy Initiative, 2021. Preview: Global Landscape of Climate Finance 2021. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2021/10/Global-Landscape-of-Climate-Finance-2021.pdf

Investment needs consistent with a path to net-zero: Emerging markets and developing countries (Excluding China)

	Gross spending 2019		Spending target 2025		Spending target 2030	
	US$bn	% GDP	US$bn	% GDP	US$bn	% GDP
Sustainable infrastructure	730	3.5%	1160	4.7%	1840	5.7%
Agriculture, food, land use, nature	150	0.7%	355	1.4%	650	2.0%
Adaptation and resilience	35	0.2%	180	0.7%	325	1.0%
Total	**915**	**4.4%**	**1695**	**6.8%**	**2815**	**8.7%**

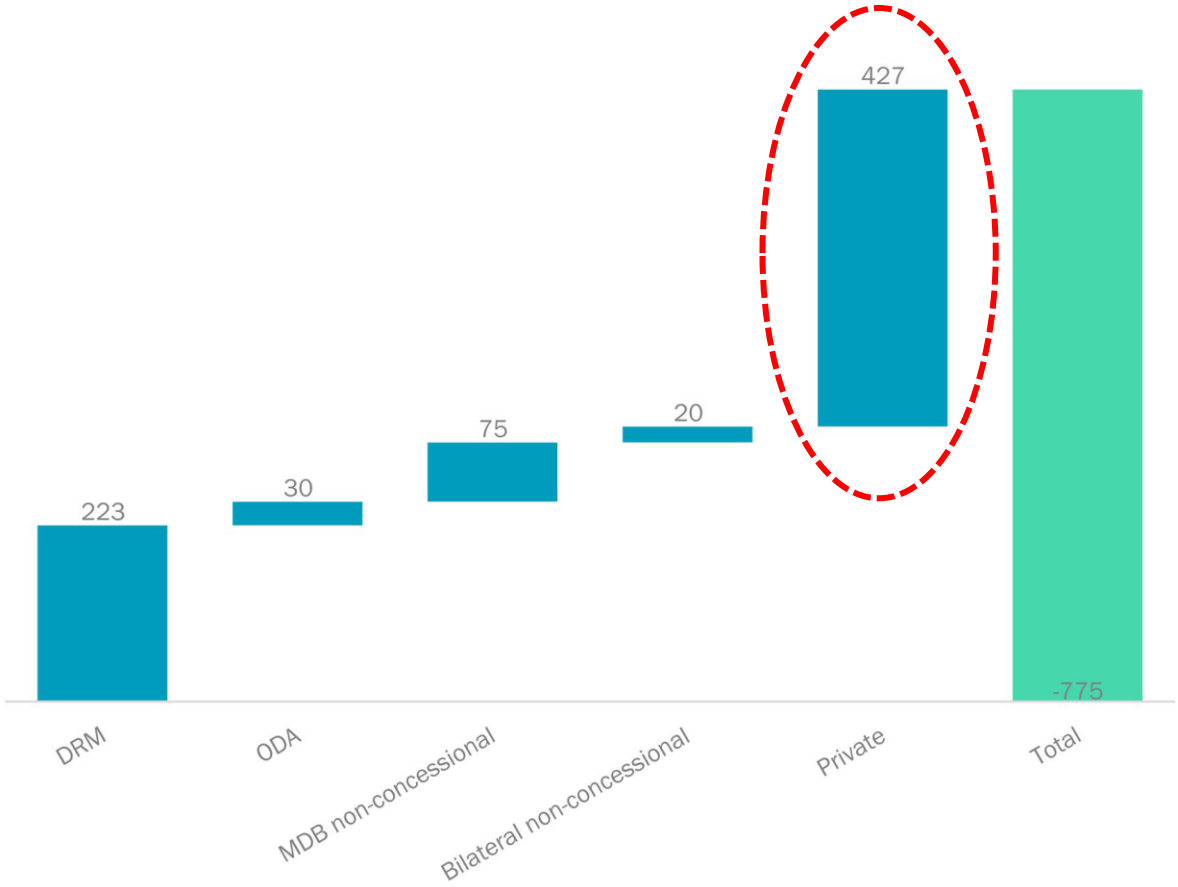
US $780 bn

US $1900 bn

"For a Paris Agreement-aligned decarbonisation path that is consistent with development goals, emerging markets and developing economies, excluding China, will require additional annual finance above recent levels of US$0.8 trillion by 2025 and $1.9 trillion by 2030."

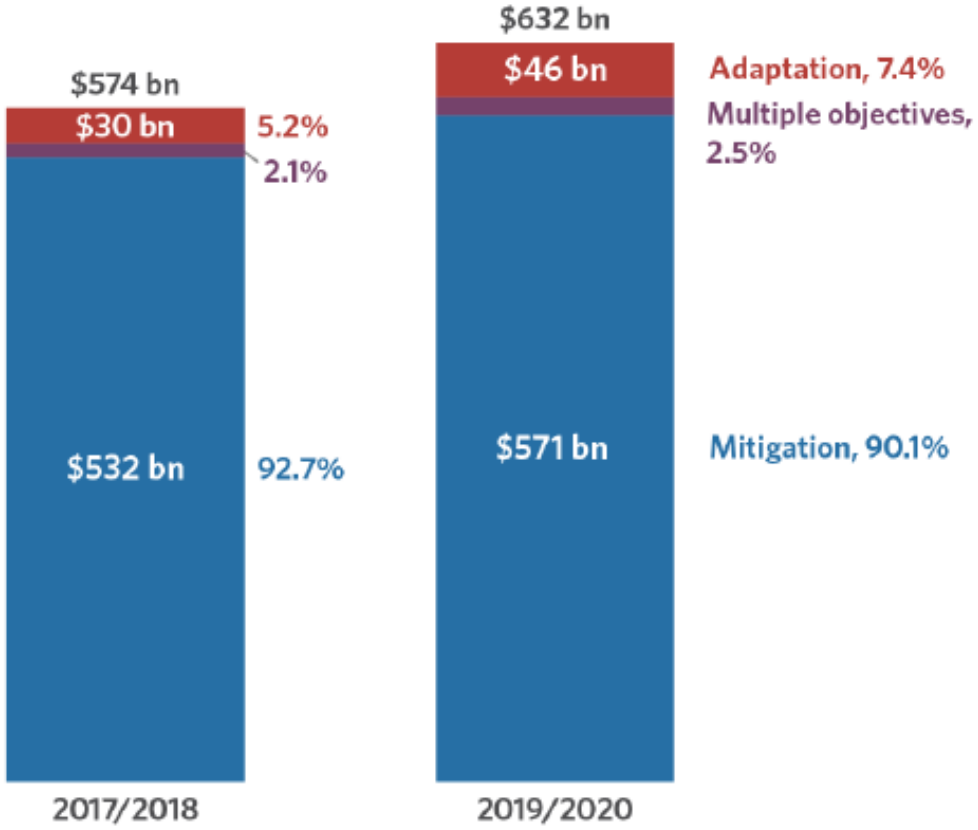
"There is no 'public option' or 'private option' – both are needed if the world is to have a decent chance of meeting the Paris temperature goals."

Incremental Financing Needs for Emerging markets and developing countries 2025 (US$ Billions - excluding China)



Source: LSE and Grantham Research Institute, 2021**.** Blended finance for scaling up climate and nature investments. London: One Planet Lab – One Planet Summit. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/11/Blended-Finance-for-Scaling-Up-Climate-and-Nature-Investments-1.pdf

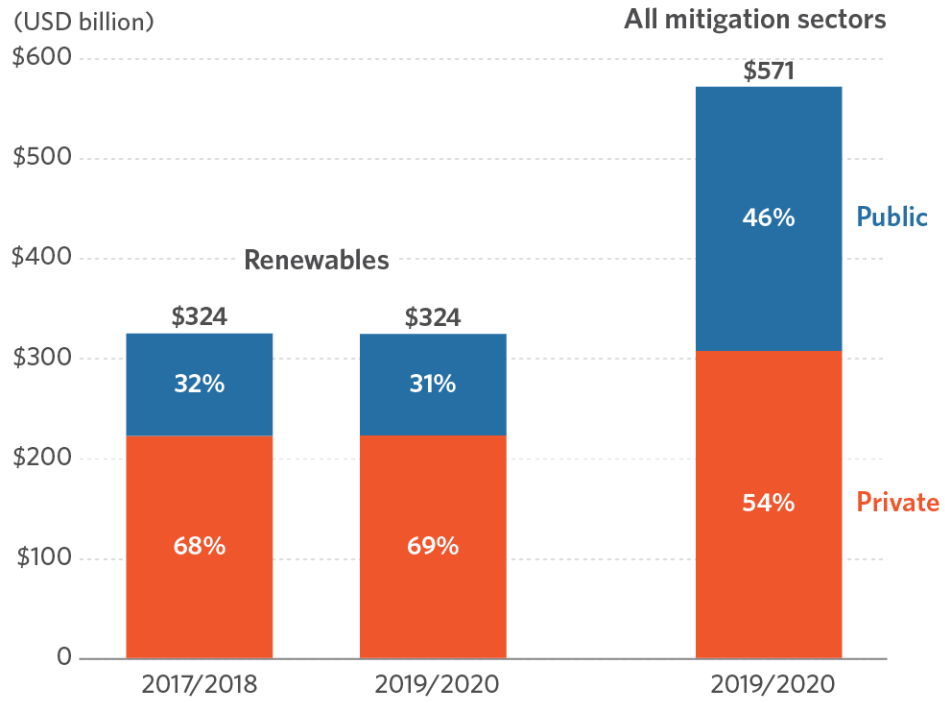
Biannual average climate finance by mitigation, adaptation and dual objectives (USD billion)

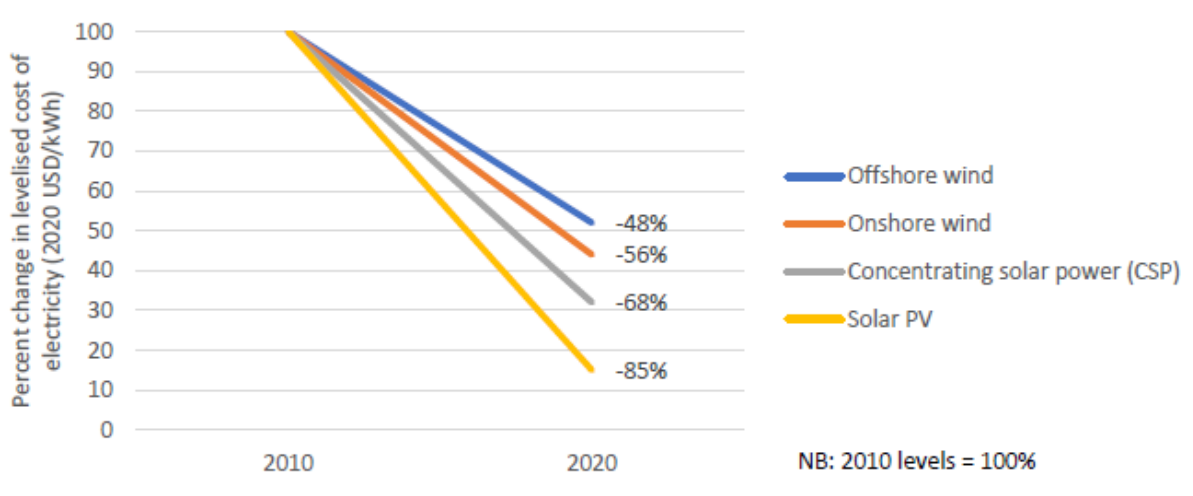


Source:

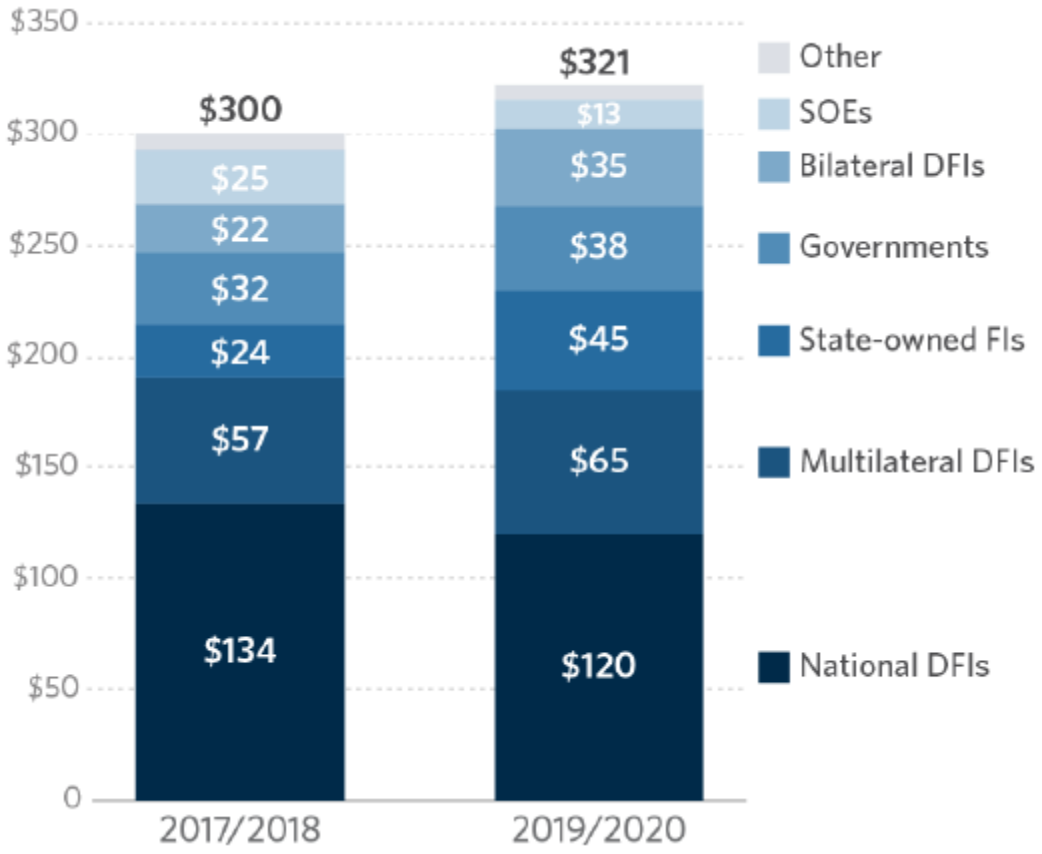
- Climate Policy Initiative, 2021. Preview: Global Landscape of Climate Finance 2021. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2021/10/Global-Landscape-of-Climate-Finance-2021.pdf
- Bhattacharya A et al. (2022) Financing a big investment push in emerging markets and developing economies for sustainable, resilient and inclusive recovery and growth. London: Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science, and Washington, DC: Brookings Institution. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/05/Financing-the-big-investment-push-in-emerging-markets-and-developing-economies-for-sustainable-resilient-and-inclusive-recovery-and-growth-1.pdf

Investment by public/private source –renewables vs. mitigation (USD billion)

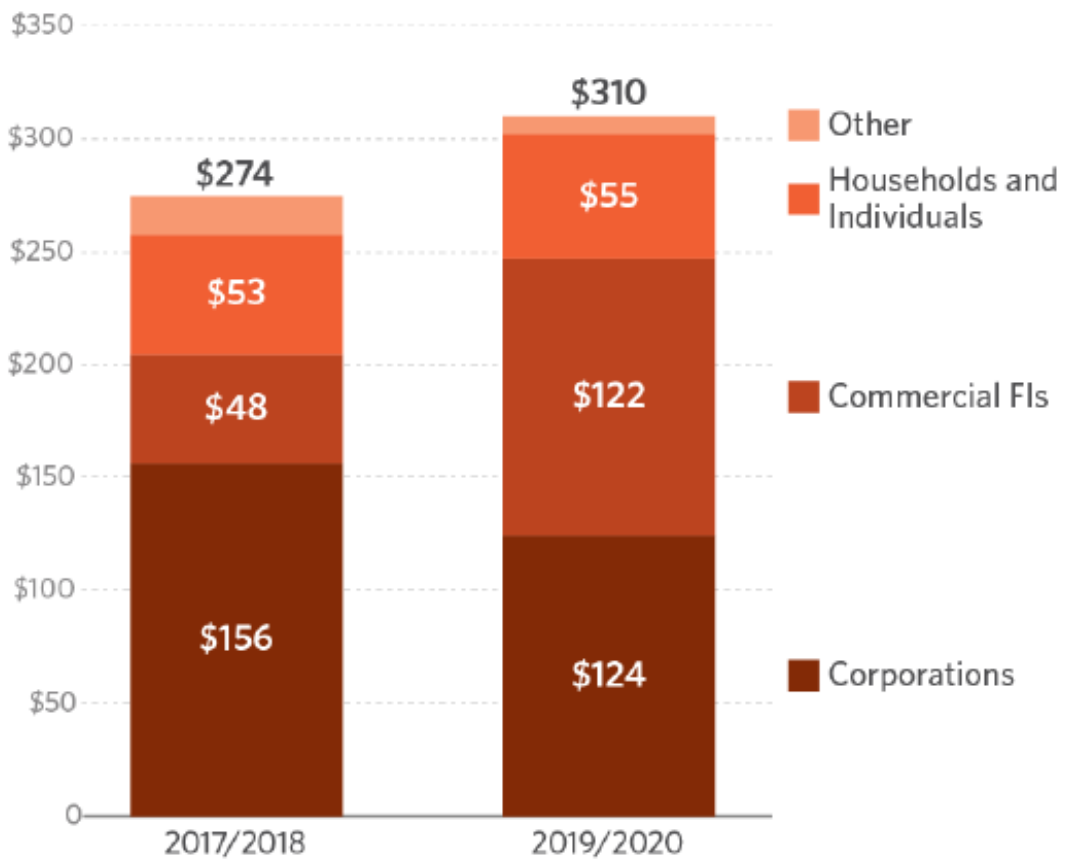




Public investment by institutions (USD billion)

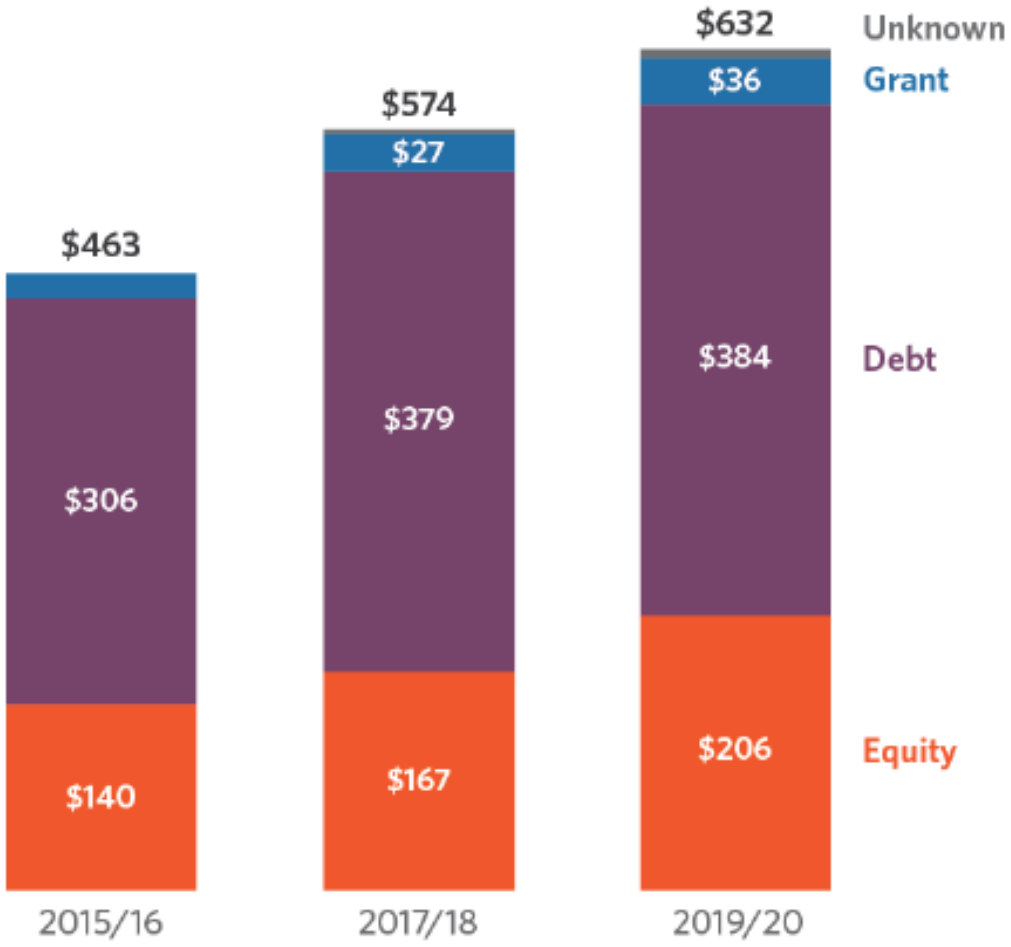


Private investment by institution type (USD billion)



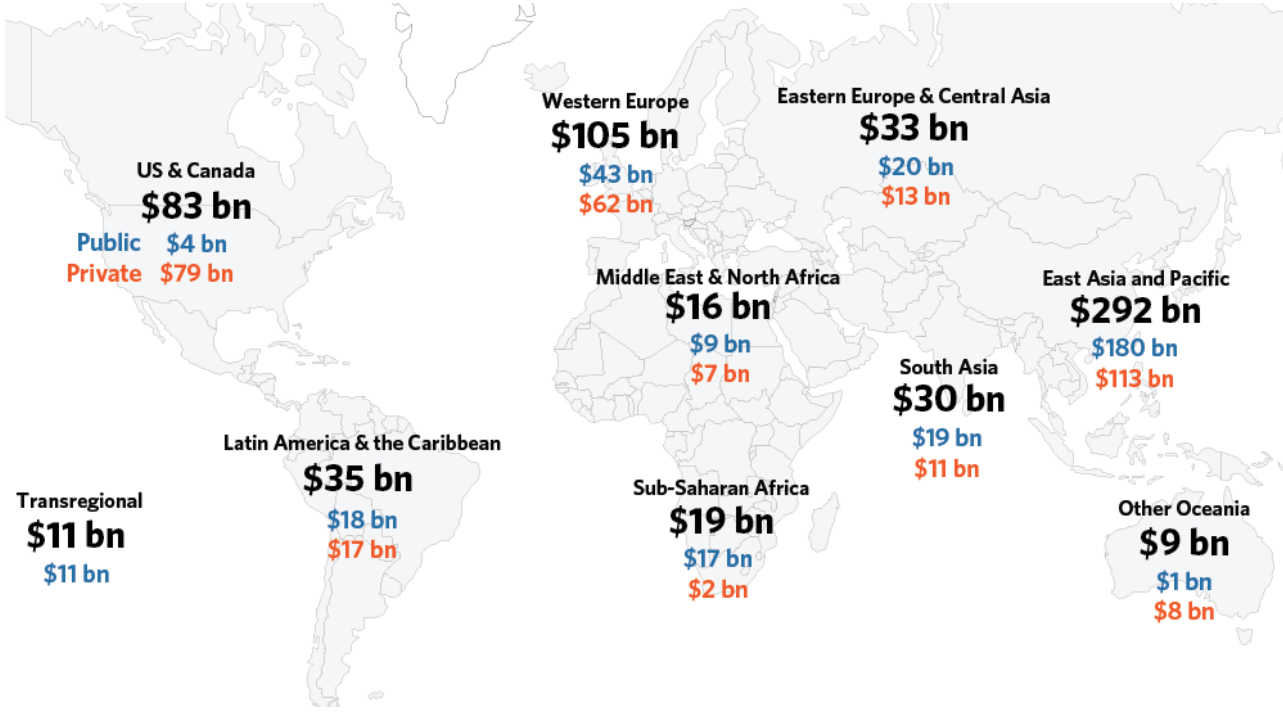
Source: Climate Policy Initiative, 2021. Preview: Global Landscape of Climate Finance 2021. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2021/10/Global-Landscape-of-Climate-Finance-2021.pdf

Climate Finance by instrument (USD billion)



Source: Climate Policy Initiative, 2021. Preview: Global Landscape of Climate Finance 2021. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2021/10/Global-Landscape-of-Climate-Finance-2021.pdf

Domestic and international climate finance flows by region of destination / annual average 2019-2020 (USD billion)



Climate finance instruments		Description
Investment financing	Equity	The provision of public finance in the form of equity stake/shareholder investment to support an enterprise or one of a series of discrete projects.
	Investment loans	The provision of public finance in the form of loans to government projects, an enterprise, or a series of discrete projects.
	Investment grants	The provision of public finance in the form of cash, goods, or services, for which no repayment is required.
	Guarantees	The provision of support by a public actor to transfer certain risks from investors or national governments to the public actor.
	Intermediated financing	The provision of financial support through intermediaries such as banks, microfinance institutions, or other actors.
Results-based financing (RBF)		The provision of funds to a recipient linked to the achievement and independent verification of a pre-agreed set of results from an investment or policy, including prizes, competitions, and payments for investment and policy outcomes.
Policy-based financing		The provision of public finance conditional on the borrower fulfilling their policy commitments.
Trade finance		The provision of finance to bridge the gap in time between import payment and export receipt of payment.
Technical assistance (TA)		The provision of finance in the form of grants or non-financial assistance provided by specialists, to finance or provide support in the form of information sharing, expertise, skills training, knowledge sharing, or other consulting-type services.

Summary of climate finance instruments

World Bank, 2020. Transformative Climate Finance: A new approach for climate finance to achieve low-carbon resilient development in developing countries. (Washington DC, USA: World Bank Group). Available from: https://openknowledge.worldbank.org/bitstream/handle/10986/33917/149752.pdf?sequence=2&isAllowed=y

The Challenge

Climate and nature finance are being held back:

a) 'upstream' by ***weak and unstable policies and regulation***, which shrink the space for private investment;

b) 'midstream' by ***scarcity* of well-prepared, *bankable projects***;

c) and 'downstream' by a ***lack of financial channels*** connecting deep sources of funds with investments.

The Opportunity

Blended finance, which combines concessional public funds with commercial funds, can be a powerful means of rebalancing risks and enabling investment.

Source: LSE and Grantham Research Institute, 2021**.** Blended finance for scaling up climate and nature investments. London: One Planet Lab – One Planet Summit. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/11/Blended-Finance-for-Scaling-Up-Climate-and-Nature-Investments-1.pdf

Rewable Energy as Exemplar

"Renewable energy represented 57% of total mitigation finance in 2019/20. It describes the ideal-type development path. For example, in **Mexico** initial engagement of the Inter-American Development Bank and the International Finance Corporation with Climate Investment Funds laid the policy groundwork, followed by demonstration projects with technical assistance support, capable players entering the market, and eventually large-scale private mobilisation. There have been similar patterns in Brazil, India, Egypt and elsewhere. DFIs/ multilateral development banks can claim that these are catalytic success stories".

Source: Bhattacharya A et al. (2022) Financing a big investment push in emerging markets and developing economies for sustainable, resilient and inclusive recovery and growth. London: Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science, and Washington, DC: Brookings Institution. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/05/Financing-the-big-investment-push-in-emerging-markets-and-developing-economies-for-sustainable-resilient-and-inclusive-recovery-and-growth-1.pdf

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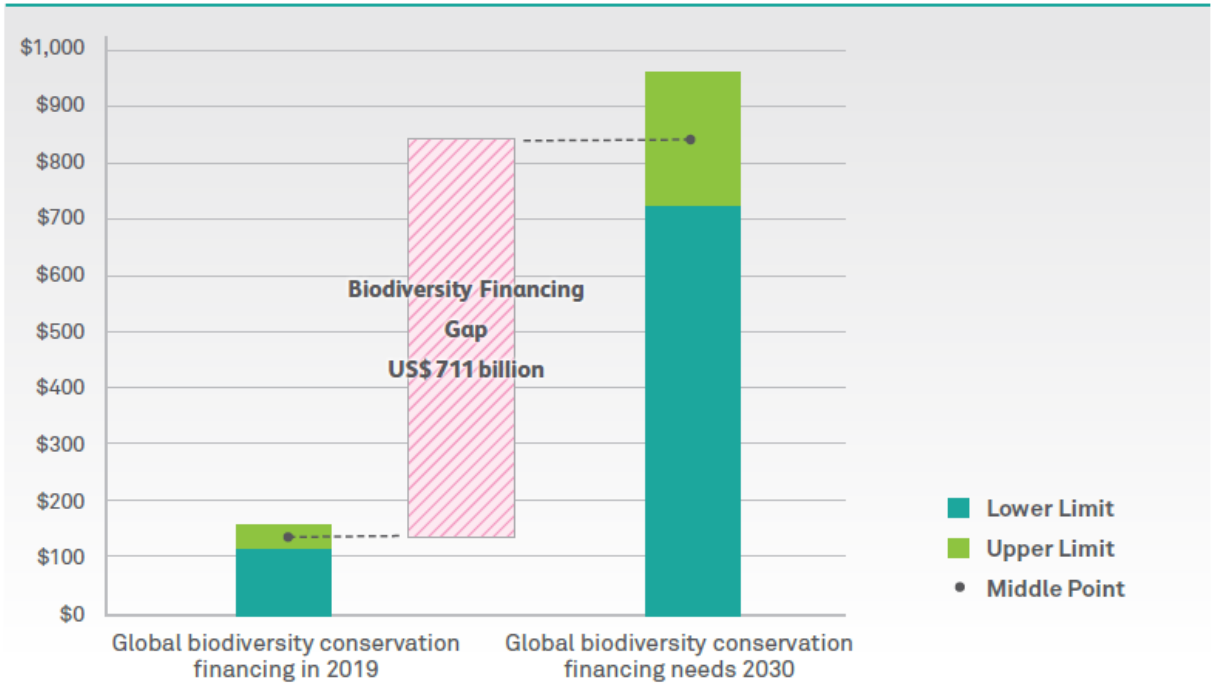
3. Water security: Drivers for increasing private investments

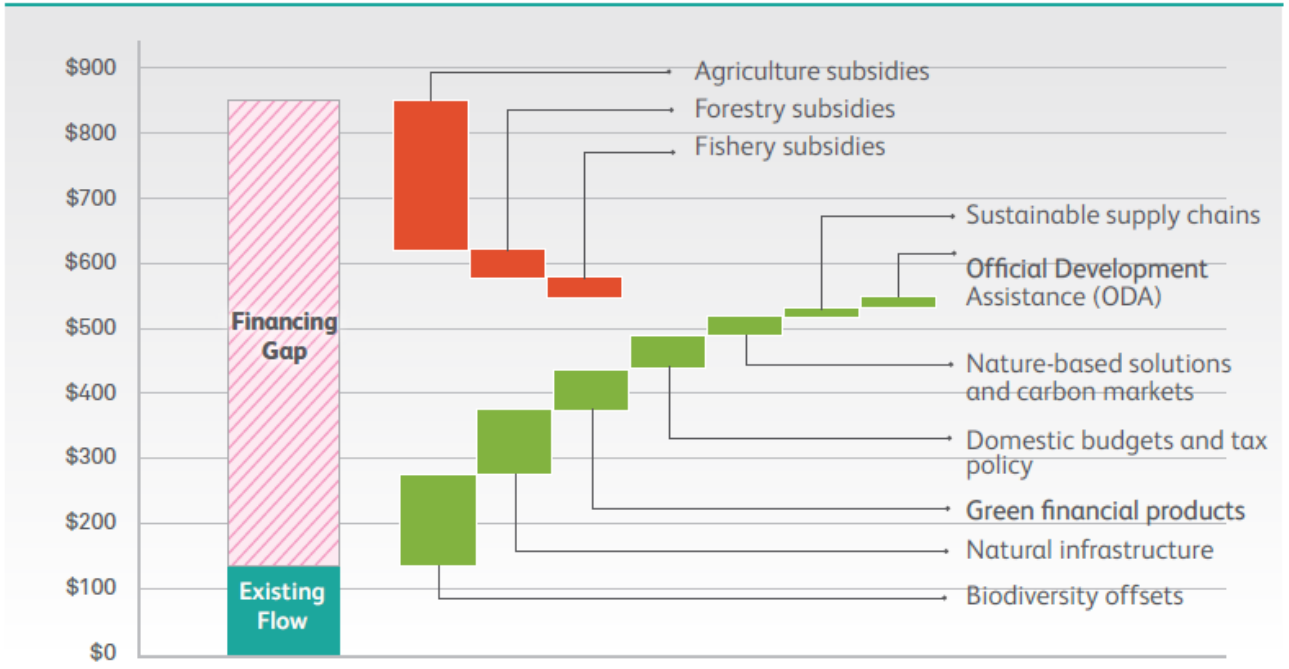
Nature Finance: The Investment Challenge

FIGURE 4.2 Global biodiversity conservation finance compared to global biodiversity conservation needs. *(US$ billions per year)*



Note: Using midpoints of the current estimates and future needs, current global biodiversity conservation finance (left graph) may need to increase by a factor of 5–7X to meet the estimated global need for biodiversity conservation (right graph).

FIGURE 5.1. Estimate of growth in financing resulting from scaling up proposed mechanisms by 2030. *(in 2019 US$ billion per year)*



Deutz, A. et al, 2020. Financing Nature: Closing the global biodiversity financing gap. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability. Avalilable from: https://www.paulsoninstitute.org/wp-content/uploads/2020/10/FINANCING-NATURE_Full-Report_Final-with-endorsements_101420.pdf

TABLE 5.1 Estimated Positive and Negative Flows to Biodiversity Conservation. *(in 2019 US$)*

Financial and Policy Mechanisms	2019 *US$ billion / year*	2030 *US$ billion / year*
A. Mechanisms that decrease the overall need for funding to be spent on biodiversity conservation		
Harmful subsidy reform (agriculture, fisheries, and forestry sectors)	(542.0) – (273.9)	(268.1) – 0*
Investment risk management	N/A	
B. Mechanisms that increase capital flows into biodiversity conservation		
Biodiversity offsets	6.3 – 9.2	162.0 – 168.0
Domestic budgets and tax policy	74.6 – 77.7	102.9 – 155.4
Natural infrastructure	26.9	104.7 – 138.6
Green financial products	3.8 – 6.3	30.9 – 92.5
Nature-based solutions and carbon markets	0.8 – 1.4	24.9 – 39.9
Official development assistance (ODA)	4.0 – 9.7	8.0 – 19.4
Sustainable supply chains	5.5 – 8.2	12.3 – 18.7
Philanthropy and conservation NGOs	1.7 – 3.5	Not Estimated**
Total Positive Financial Flows	**123.6 – 142.9**	**445.7 – 632.5**

Note: All figures in this table are reported in 2019 US$.

* Assumes a global subsidies reform scenario that phases out by 2030 the most harmful subsidies as described by OECD (2020).

** While future flows for philanthropy and conservation NGOs are seen as highly catalytic for mobilizing private sector financial flows, it was determined that they did not pass the threshold for inclusion in this report as a main mechanism for scaling up to close the biodiversity financing gap.

Deutz, A. et al, 2020. Financing Nature: Closing the global biodiversity financing gap. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability. Avalilable from: https://www.paulsoninstitute.org/wp-content/uploads/2020/10/FINANCING-NATURE_Full-Report_Final-with-endorsements_101420.pdf

Nature Finance: An Opportunity for the Private Sector

"It is necessary to overcome:

- *The lack of valuation of natural capital*
- *The difficulty of defining commercial business models"*

(LSE and Grantham Research Institute, 2021)

Conservation Finance Taxonomy

1. Return-based/Private Investments

1.1. Equity:

- Seed funding:
  - Angel Investing
  - Crowdfunding
  - Family and Friends Funding
  - Seed Venture Capital Funds
- Venture Capital
- Private Equity and M&A
- Capital Markets:
  - Stocks/shares
  - Derivatives:
    - Options
    - Forwards
    - Futures
    - Swaps

1.2. Debt:

- Microfinance
- Green loans
- Leasing
- Bonds:
  - Sustainable bonds
  - Green bonds
  - Blue Bonds
- Trade Finance
- Mezzanine Financing
  - Convertible Debt
  - Preferred Equity

2. Government-related instruments

- Bio-prospecting charges
- Carbon Tax
- Concession fees
- Debt-for-nature swaps
- Deposit-refund Schemes
- Environmental Charges
- Environmental Compensations
- Environmental Fees
- Environmental Fines
- Environmental Penalties
- Environmental Subsidies
- Environmental Taxes
- License fees
- Offsets
- Resource Permits
- Royalties

3. Businesses and Markets

- Carbon Trading
- Conservation Businesses
- Corporate Social Responsibility
- Cost Sharing
- Public-Private Partnerships
- Revenue Sharing
- Supply Chain Resilience
- Sustainability
- Voluntary Offsets
- Watershed Trading

4. Grants and other transfers

- Conservation Trust Funds
  - Endowment Trust Funds
  - Sinking Trust Funds
  - Revolving Trust Funds
- Corporate Funding
- Corporate Philanthropy
- Donations
- Environmental Funds
- Grants
- Official Development Assistance
- Philanthropic Foundations
- Private Philanthropy
- Remittances

5. Blended Finance

- Concessional Finance
- Design Funds
- Guarantees
- Preparation Funds
- Risk Assurance
- Technical Assistance Funds

6. Digital Instruments

- Cryptocurrencies
- NFTs

Source: Proposed by José Palma and Sergey Vassilyev, Humphrey Fellows 2021-2022 at University of California Davis, for TNC LAR Public Policy Group, based on the Conservation Finance Alliance Taxonomy (2020) and expanded to include other financial mechanisms that are used in traditional and green finance. Available at: *https://www.conservationfinancealliance.org/cfa-white-paper*

The Nature Conservancy Colombia

Sustainable Cattle Ranching: From debt to equity

Conservation Finance:

An opportunity to scale up Nature-Based Solutions in Colombia

The Nature Conservancy
Colombia

Reducing poverty, while conserving nature...

4,100 cattle ranchers in 12 states receiving technical assistance

13.207 ranchers have been trained

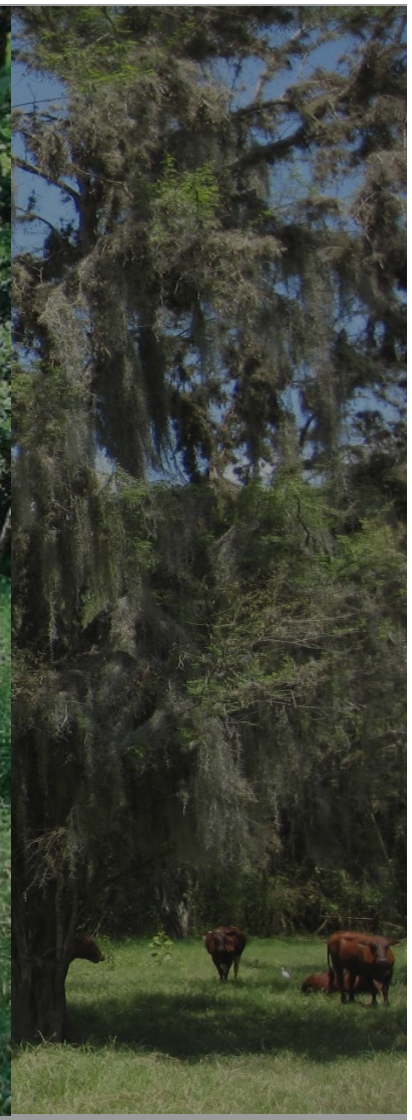
43,130 acres of forests protected by conservation agreements (17,454 ha)

79,000 acres have been transformed into silvopastoral systems (32,000 ha)

1,685 ranchers have received payment for ecosystem services

3 million seedling have been reproduced and planted!

1.2 Mt CO_2e capture



Sustainable Cattle Ranching Fund

The Nature Conservancy

Ensures project development

XYZ
Project Manager
Technical and administrative coordinator

Direct loans to ranchers
Access to public subsidies

International Investors
(HNWIs, Foundations Multilateral Agencies, etc.)

Capital

Returns
(% interest)

Fund (fiduciary)

debt payment

Cattle Ranchers
Implementing sustainable initiatives

Implementation support

Technical Assistance Providers

Debt service + fund returns ensure business cycle restarts

contract for milk/meat

Meat/ milk production

Off-Taker
In charge of selecting participant suppliers for the program

Provide **capital and support** for **small and medium ranchers** to implement Sustainable Cattle Ranching Systems and **recover degraded lands** and develop **conservation corridors**

The Alternative Model: Ag-ESCO

Ensures project development

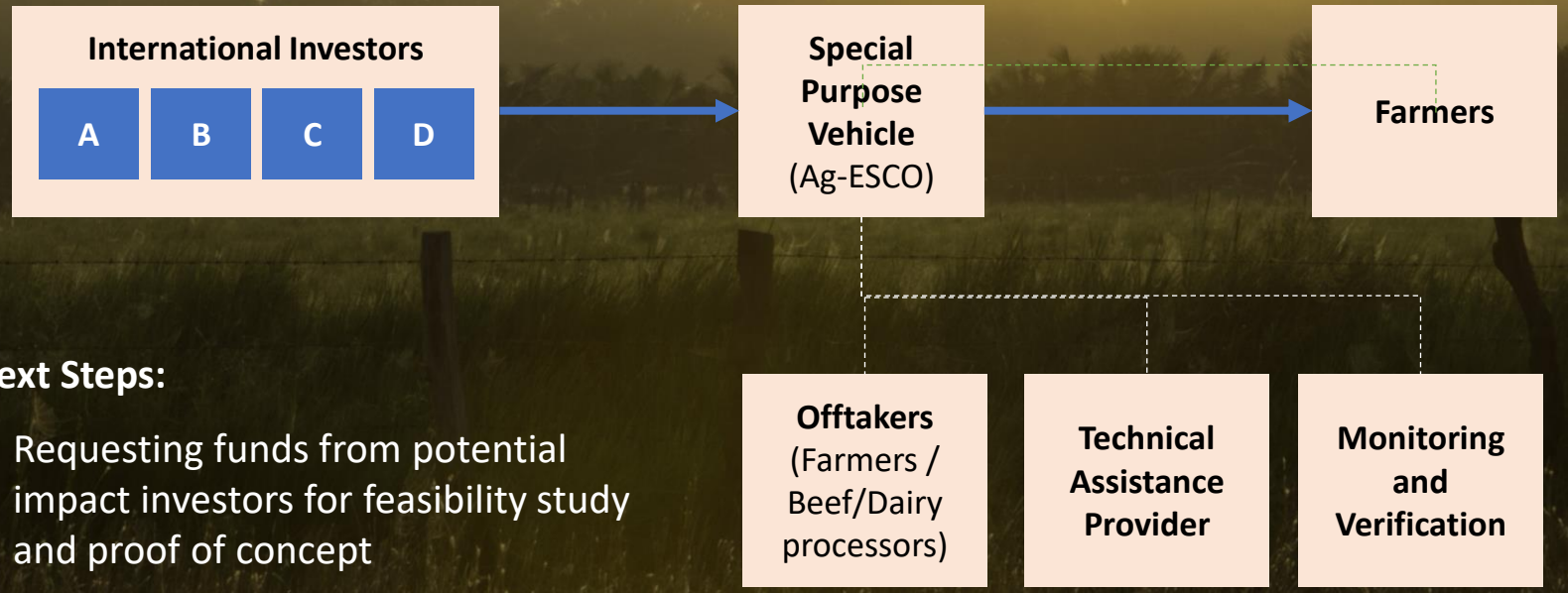
The Nature Conservancy

Two types of investments:

- ***Equity to fund SPV creation and initial operation (Venture Capital)***
- ***Debt to invest in silvopastoral systems in farmers' lands***

SPV and farmers sign a contract by which:

- ***SPV invest in silvopastorral systems in farmers' lands (CAPEX) and obliges to give technical assistance***
- ***Farmers´ cover operational costs (OPEX) and obliges to implement silvopastoral systems practices***
- ***SPV and Farmers agree on splitting gains in productivity***



Next Steps:

- Requesting funds from potential impact investors for feasibility study and proof of concept

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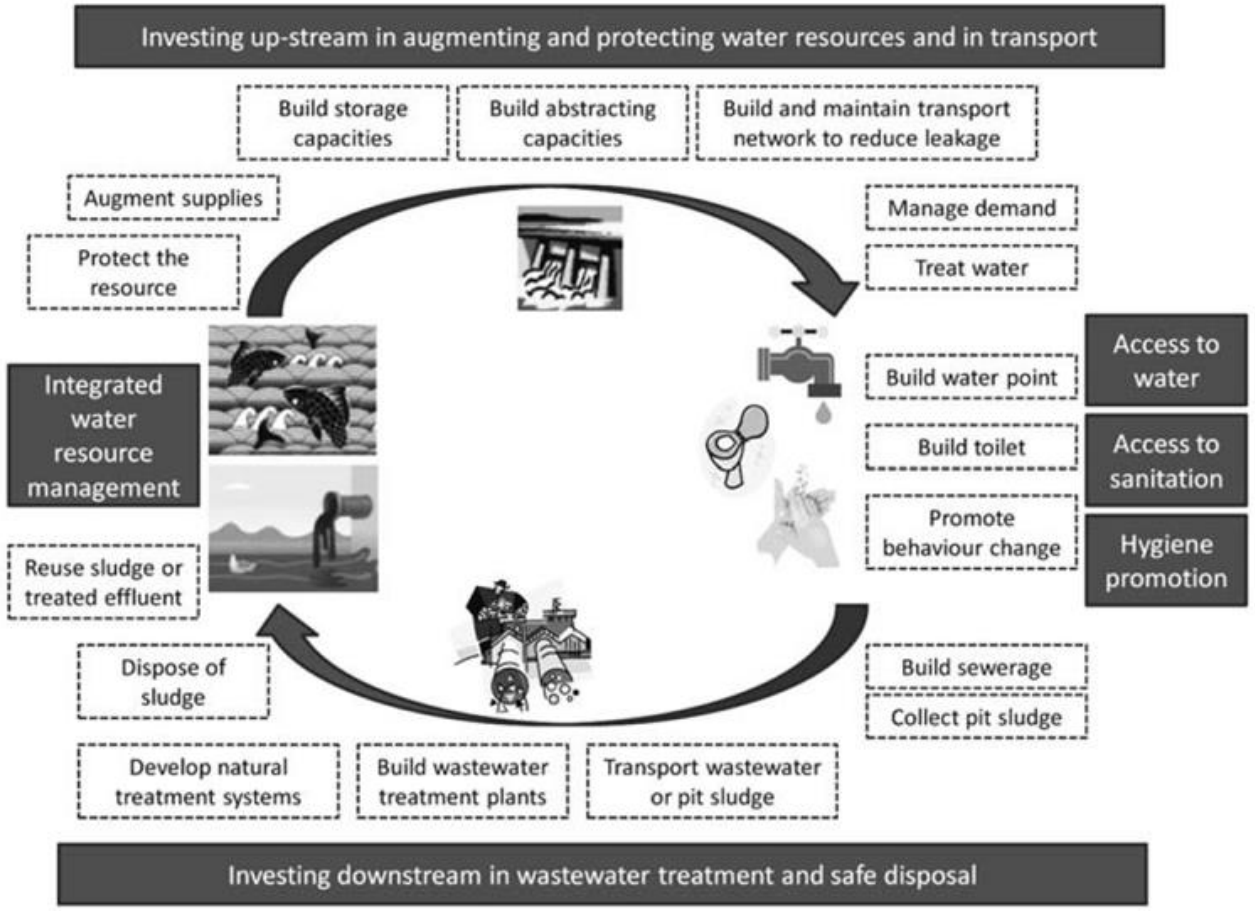
Climate Change: The Water Security Challenge

Estimate by Source	Current Anual Investment	Annual Investment Need	Annual Financing Gap
Infrastructure: Developing countries (UNCTAD, 2014)	US $150 bn (2014)	US $410 bn (2030)	US $260 bn
Infrastructure: Developed countries (MGI 2013; 2016)	US $200 bn (2013)	US $500 bn (2030)	US $300 bn
Climate Change Adaptation (WB, 2010; OECD, 2022)	US $6,6 bn (2020)	US $75-$100 (2050)	US $68-$93 bn
	Water Security	**WASH**	**Irrigation**
Agenda 2030 **Sustainable Development Goals** **SDG 6**	Global estimates of investments in the water sector to achieve water security range from US$6.7 trillion by 2030 to US$22.6 trillion by 2050 (WWC/OECD, 2015).	To achieve the WASH component of SDG 6 by 2030, it is estimated that capital investment needs to triple to reach US$1.7 trillion, without including operating & maintenance costs (Hutton and Varughese, 2016).	FAO has projected that an estimated US$960 billion of capital investment is needed to expand and improve irrigation until 2050 in 93 developing countries, compared to the 2005–2007 levels of investment (Koohafkan et al, 2011).

¿What is/shoud be the role of private investors?



Source: OECD (2011), Benefits of Investing in Water and Sanitation: An OECD Perspective, OECD Studies on Water, OECD Publishing, Paris, https://doi.org/10.1787/9789264100817-en

- *"Directly"* as ***service providers*** through water private companies
  - ➢ **Situation:** Water utilities responsible for catching, treating and delivering drinking water to households or industries (upstream), and then transporting and treating polluted water to deliver it back to the environment under predefined quality standards (downstream).
    - ❖ **Business model:** a network of pipes in densely urban populated formal settlements
      - ✓ **Driver:** Economies of scale
- *"Indirectly"* as ***financiers*** of public or private investments.
  - ➢ **Situation:** Given the sensitivity of water provision to the poor in developing countries, it is likely that the public sector there will retain its primacy in this industry
    - ❖ **Business model:** to finance water investments through loans.
      - ✓ **Driver:** Financing national/local governments to reduce political exposure

Water Investments Instrumments

Adaptation

- **Green debt:** Ex., Sustainability-Linked Loans
- **Green Bonds:** 8% of the total *climate-aligned bonds* (US $101 billion)
- **Results-based financing:** PRODES wastewater treatment in Brazil
- **Environmental Impact bonds:** District of Columbia Water and Sewer Authority (USA) to control storm water runoff
- **Green Insurance:** *Catastrophe Bonds* (CAT); *Resilient Bonds* (EBRD, 2019).

Conservation / Nature-Based Solutions

- **Return-On-Investment:** Water funds in Greater Cape Town (South Africa); Camboriú River watershed (Santa Caterina, Brazil); Sebago Lake watershed (Maine, USA)

Green bonds projects taxonomy for the water sector

Water

Supply management & wastewater treatment

	Asset type	Asset specifics	2 degree compliant	Screening indicator	Certifiable
WATER INFRASTRUCTURE	Water monitoring	Smart networks, early warning systems for storms, droughts, floods or dam failure, water quality or quantity monitoring processes	●		●
	Water Storage	Rainwater harvesting systems, storm water management systems, water distribution systems, infiltration ponds, aquifer storage, groundwater recharge systems, sewer systems, pumps, sand dams	●	No net GHG emissions are expected, and the issuer discloses the justification for this decision with supporting documentation OR	●
	Water treatment	Drinking water treatment, water recycling systems, wastewater treatment facilities, manure and slurry treatment facilities Ecological retention system, current force reduction mechanisms	●	Negative net GHG emissions are expected, and the issuer has estimated and delivered the GHG mitigation impact that will be delivered over the operational lifetime of the project or asset	●
	Water distribution	Rainwater harvesting systems, gravity fed canal systems, pumped canal or water distribution systems, terracing systems, drip, flood and pivot irrigation systems	●		●
	Water desalination	Seawater desalination plants and brackish water desalination plants	●	The average carbon intensity of energy used to power the plant must be at or below 100g CO2/kWh over the remaining lifetime of the asset	●
	Flood defences	Surge barriers, pumping stations, levees, gates	●		●
	Nature based solutions	Water storage from aquatic ecosystems, aquifer storage, snowpack runoff, groundwater recharge systems, riparian wetlands	●	No net GHG emissions are expected, and the issuer discloses the justification for this decision with supporting documentation	●
		Flood defences by ecological retention, restoration of riparian wetlands, relocation of assets	●	OR Negative net GHG emissions are expected, and the issuer has estimated and delivered the GHG mitigation impact that will be delivered over the operational lifetime of the project or asset	●
		Drought defences by aquifer storage, recharge zone management, wetland management	●		●
		Water treatment by natural filtration systems, forest and fire management	●		●
		Stormwater management by permeable surfaces, erosion control systems, evapotranspiration systems	●		●
	Products	Water saving technologies	●		

Source: Climate Bonds Initiative, 2021. Climate Bonds Taxonomy. Available from: https://www.climatebonds.net/files/files/CBI_Taxonomy_Tables-2June21.pdf

Thanks!

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