

UNLOCKING PRIVATE SECTOR INVESTMENT IN ADAPTATION

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Despite steady growth of global climate finance over the last decade, a 590 percent annual increase in climate finance is needed by 2030 to meet climate finance needs. This is especially the case for Türkiye, which faces an annual adaptation cost estimated at \$155-330 billion by 2030. Only 7.5 percent of climate finance in Türkiye is dedicated to adaptation, with the private sector lagging behind. This article presents several policy recommendations for mobilizing private sector adaptation financing in Türkiye's climate adaptation initiatives. It emphasizes four pillars: enhancing data accessibility, ensuring clear and consistent policy signals, establishing an enabling legal and policy framework, and economic incentives. These pillars offer Türkiye a promising pathway for increasing adaptation finance for a resilient and sustainable future.

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Over the last decade, global climate finance increased steadily (with a cumulative average annual growth rate of 7 percent), almost doubling between 2011 and 2020,¹ reaching a cumulative \$4.8 trillion. While the steady increase in climate finance is noteworthy, it is not sufficient to meet the climate finance needs to tackle climate change and its negative impacts.² The Paris Agreement strives to limit global temperature increase to 1.5°C in this century, while also increasing resilience to climate change. The Climate Policy Initiative (CPI) estimates that a minimum increase of 590 percent in annual climate finance is required to meet internationally agreed climate objectives by 2030.³

Finance for adaptation lags that of climate mitigation. Climate adaptation finance represents only 7.5 percent of the total climate finance flow of \$653 billion in 2019-2020, compared to 89.7 percent of mitigation finance.⁴ This contrast is distressing, especially considering that annual adaptation costs in developing economies will be in the range of \$160 to \$340 billion by 2030, as estimated by the United Nations Environment Programme.⁵ The Global Commission for Adaptation highlights that often adaptation is cheaper than recovery or rebuilding. In their 2019 report, the Commission found that the overall rate of return on investments in improved resilience has benefit-cost ratios ranging from 2:1 to 10:1, and in some cases even higher.⁶ Similarly, the World Bank's (WB) Lifelines Report found that every \$1 invested in resilient infrastructure in low- and middle-income countries yields \$4 in net benefits.⁷

The Crucial Role of the Private Sector in Adaptation and Resilience Finance

Adaptation finance has been and is predominantly channeled through the public sector. However, private sector participation is also essential in climate adaptation and resilience building. There are three important roles that the private sector can play to address adaptation: i) investing in their operations and assets' resilience as "adaptors" themselves, ii) providing goods and services that facilitate adaptation and becoming "solution providers", and iii) providing capital for adaptation and

1) Baysa Naran, Jake Connolly, Paul Rosane, Dharshan Wignarajah, Githungo Wakaba and Barbara Buchner, "Global Landscape of Climate Finance: A Decade of Data," Climate Policy Initiative (2022): 9-12.

2) Naran et al. (2022): 9-12.

3) Barbara Buchner, Baysa Naran, Pedro de Aragão Fernandes, Rajashree Padmanabhi, Paul Rosane, Matthew Solomon, Sean Stout, Githungo Wakaba, Yaxin Zhu, Chavi Meattle, Sandra Guzmán and Costanza Strinati, "Global Landscape of Climate Finance 2021," Climate Policy Initiative (2021): 2-4.

4) Naran et al. (2022): 31-36.

5) UNEP, "Adaptation Gap Report 2022," UNEP (2022): 19-20.

6) Global Commission on Adaptation, "Adapt Now: A Global Call for Leadership on Climate Resilience," Global Commission on Adaptation (2019): 12-14.

7) Stephane Hallegatte, Jun Rentschler, Julie Rozenberg, "Lifelines: The Resilient Infrastructure Opportunity", World Bank (2019): 1-4.

resilience-building projects as “financiers.”⁸ Each role helps the economy and the natural environment become more resilient.

It is widely recognized that the private sector faces barriers to investing in adaptation due to low perceived or actual returns on investment, immediate costs associated with distant exposure, and lack of available climate data.⁹ The WB report, “Enabling Private Investment in Climate Adaptation and Resilience: Current Status, Barriers to Investment and Blueprint for Action” details the barriers and opportunities for private sector investment in adaptation.

As financiers, private actors offer financing along a spectrum of terms, ranging from highly concessional terms with more grant components, e.g. philanthropists or foundations to a combination of investment returns, e.g. blended finance to fully commercially driven with a focus on investment returns. Different investors and intermediaries have different investment strategies, risk appetite, return expectations, and investment horizons. Concessional capital is intended to fill a gap where the private sector (commercial capital) would not otherwise invest. Other sources of finance also offer potential opportunities to increase private sector participation in adaptation such as impact investors, venture capital (VC) funds, private equity (PE), and incubators with dedicated capital for small and medium-sized enterprises (SMEs) and start-up companies that can provide technologies and services necessary for adapting to a changing climate.¹⁰ This article focuses on how the private sector can support Türkiye’s adaptation and resilience-building projects as financiers.

The “Business Case” for Adaptation Finance in Türkiye

Climate change is already affecting the economy, society, and the ecosystems of Türkiye. The associated impacts are being manifested in rising temperatures (air and sea), sea level rise, coastal erosion, and changing rainfall and other weather patterns. The observed average annual mean temperature in Türkiye increased by more than 2°C during the last century, from 10.9°C in 1901 to 12.9°C in 2020.¹¹ Maximum and minimum temperatures have also increased significantly over the last 50 years. The number of summer days, warm days, warm nights and tropical nights have been increasing across Türkiye while frequency of frost days, cool days and cool nights are decreasing.¹² In winter, the number of frost and snowy days has also

8) Arame Tall, Sarah Lynagh, Candela Vecchi Blanco, Pepukaye Bardouille, Felipe Pino Montoya, Elham Shabahat, Vladimir Stenek, Fiona Stewart, Samantha Power, Cindy Paladines, Philippe Neves, Lori Kerr, “Enabling Private Investment in Climate Adaptation and Resilience: Current Status, Barriers to Investment and Blueprint for Action,” World Bank (2021): 27-34.

9) Tall et al. (2021): 27-34.

10) Tall et al., (2021): 27-34.

11) World Bank Group, (2022), “Türkiye Adaptation and Resilience Assessment”, CONFIDENTIAL.

12) Sensoy et al., 'Trends in Turkey climate indicated from 1960 to 2010' 6th International Atmospheric Science

significantly decreased over the last 30 years, while the lowest night air temperatures have increased.¹³ These changes in extreme temperatures vary across the country and have repercussions on the frequency, duration and magnitude of heatwaves and other extremes such as drought and wildfire, with subsequent knock-on effects on health, labor productivity and ecosystems – in turn impacting economic activities, especially agriculture.¹²

For instance, Türkiye experienced severe droughts in 2007-08 and 2013-14, with the earlier drought affecting more than 435,000 farmers and resulting in losses of US\$1.4–2.2 billion.¹⁴ These led to agricultural losses, freshwater shortages, and drying and shrinking of lakes and wetlands. For instance, once Türkiye’s second biggest lake, Lake Tuz (Tuz is Turkish for “salt”) located on the Central Anatolia plateau, completely dried up in 2008 and 2016.¹⁵

Over the last 20 years, Türkiye introduced favorable investment legislation for public-private partnerships (PPPs). As a result, between 2003-2021, Türkiye implemented 193 PPP projects in a variety of sectors worth US\$ 170 billion.¹⁶ The country has set ambitious targets to upgrade its infrastructure. From transportation to energy, there are ample opportunities available in the pipeline for the private sector to get involved as financiers. For example, Türkiye is committed to transforming its rail transport infrastructure from conventional to high speed. In 2024 alone the investment amount is set to US\$ 30 billion in rail projects.

Symposium (2013), available at https://www.researchgate.net/publication/289520845_Trends_in_Turkey_Climate_Indices_from_1960_to_2010

13) Ministry of Environment and Urbanisation, “Climate Change Training Module Series 1: Scientific Basis of Climate Change and Impacts on Turkey. Ankara: Ministry of Environment and Urbanization.” (2019). Available at: https://iklimiduy.org/module/iklimiduy_modul_1_en.pdf

14) Morvarid Bagherzadeh and Makiko Shigemitsu, “Building the Resilience of Turkey’s Agricultural Sector to Droughts,” OECD Food, Agriculture and Fisheries Papers, (2021): 6-8.

15) NASA Earth Observatory, “Disappearing Lake Tuz,” NASA Earth Observatory, 9 August 2021. <https://earthobservatory.nasa.gov/images/149211/disappearing-lake-tuz>

16) Presidency of the Republic of Türkiye, Investment Office, “Investing in Infrastructure and PPP Projects in Türkiye,” July 2023. Available at: <https://www.invest.gov.tr/en/library/publications/lists/investpublications/infrastructure-industry.pdf>

While the business case for adaptation in Türkiye is clear, investment in adaptation falls short. Türkiye has accessed various sources of climate finance, with most of the climate finance flows being primarily focused on mitigation, especially in renewable energy.^{17,18,19,20,21} Private sector investment in adaptation can grow substantially, if supported by the right enabling environment. However, adaptation is, or at least is perceived to be, a lot harder to profit from in comparison to mitigation projects. There are a range of important barriers to private sector investment in adaptation in Türkiye, but these can be addressed with the right policy environment and approaches to risk management.

Barriers to Private Sector Investment in Adaptation and How to Address Them Economic and Financial Hurdles

The macroeconomic context in Türkiye remains the most critical challenge to private sector investment, inhibiting the capacity of firms to raise finance for adaptation and resilience-building projects. Macroeconomic hurdles include high inflation rates, high interest rates, and a volatile exchange rate.²² Currency volatility has been a major deterrent for foreign investors to purchase lira-denominated securities. Furthermore, there remain constraints on doing business in the country, such as the time to resolve insolvency being 5 years, compared to the OECD average of 1.7 years.²³

The financial system in Türkiye tends to operate around short or mid-term horizons. For tenures in local liras, timelines can be as short as 3 months and very rarely exceed 4 years. Beyond the macroeconomic conditions, structural barriers that hinder the availability of long-term finance include a small domestic saving pool, an underdeveloped institutional investor base, and debt finance being overly concentrated in the banking sector and mostly as loans. While private equity is growing in Türkiye, it is still limited, especially for smaller investments through venture capital and angel investors.²⁴ The main strategy from Turkish private equity actors consists of providing growth capital to established, cash-generative companies

17) AidAtlas (Undated), “All Donors to Turkey for Climate Adaptation during 2002–2020,” Available at: <https://aid-atlas.org/profile/all/turkey/climate-adaptation/2002-2020>

18) Climate Funds Update (Undated). Data Dashboard. Available at: <https://climatefundsupdate.org/data-dashboard/>

19) World Bank, “Unlocking Green Finance in Turkey,” (Washington, DC: World Bank, 2022): 16. Available at: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099040002232227038/p174569076d6f30a20916807841092b30f3>

20) Reuters, “Erdogan says Turkey signed \$3.2 bln green climate fund deal,” (2021). Available at: <https://www.reuters.com/business/cop/erdogan-says-turkey-signed-32-bln-green-climate-fund-deal-2021-10-27/>

21) Ministry of Foreign Trade, “Yilin Cumhurbaşkanlığı Yıllık Programı 2023 Presidency Annual Program,” (2022). Available at: <https://www.sbb.gov.tr/wp-content/uploads/2022/11/2023-Yili-Cumhurbaşkanligi-Yillik-Programi.pdf>

22) OECD, “Türkiye Economic Snapshot,” OECD (2023): 1-3.

23) World Bank, undated, “Doing Business – Turkey,” available at https://archive.doingbusiness.org/en/data/exploreeconomies/turkey#DB_ri

24) World Bank Group, “Selected Capital Markets Options to Promote Long-Term Finance for Türkiye,” available at: <https://documents1.worldbank.org/curated/en/09954030609222738/pdf/P1746480153669026082f10c2fc617fcea0.pdf>

with no specific sectoral focus and limited coverage of green investments. Change is needed to unlock private capital financing for adaptation and resilience-building projects in Türkiye. As macroeconomic conditions improve, in the longer term,²⁵ broader financial instruments will become more common.

Availability of Climate-Related Data

A key barrier in terms of data and information in Türkiye relates to the lack of adequate granular localized and sector-specific climate-risk data.²⁶ Adaptation is place and context specific – for example, siting a project in a different location to avoid projected physical climate risks, or building a dam with a larger retention basin to account for higher precipitation variability. For the financial sector, this includes having the data and tools to stress test their overall balance sheets for specific climate scenarios. For instance, banks with an important loan book in municipal water utilities, could assess the materiality of a ‘day zero’ in Istanbul – the point at which municipal water supplies would have needed to be switched off.

The private sector in Türkiye experiences challenges in accessing climate risk data and information to guide investment decision-making. Türkiye has a robust climate observation network with 1,233 weather stations, 2,045 hydromet, and 956 online stations.²⁷ However, there is limited public access to this information, as not all the data is accessible without request. There is no specific regulation stipulating public access to climate change information and the country does not have a centralized climate change data platform equipped with adequate information and tools for public use. Therefore, when the private sector can access data, its reliability is questioned and there is a lack of knowledge on how to use and apply climate risk data and information to investment decision-making which limits the ability to identify, assess, and manage climate risks. As such, private actors commonly use international resources such as Bloomberg.

A Climate Portal²⁸ is being developed by the Directorate of Climate Change (DoCC) of the Ministry of Environment, Urbanization and Climate Change, which is expected to address this issue by providing a one-stop shop for climate and disaster risk information in Türkiye. It is recommended that the contents of the Climate Portal should be accessible to all key economic actors outside the government structure and include high-resolution hazard maps, and downscaled climate change scenarios

25) Long-term finance can be defined as “any financial instrument with maturity exceeding one year (such as bank loans, bonds, leasing and other forms of debt finance), and public and private equity instruments.” (World Bank, Global Financial Development Report 2019 / 2020).

26) Long-Term Infrastructure Investors Association (LTIIA).

27) Ministry of Environment, Urbanization, and Climate Change (2018). Seventh National Communication of Turkey under the UNFCCC. Ankara: Ministry of Environment and Urbanization. Available at: https://unfccc.int/sites/default/files/resource/496715_Turkey-NC7-1-7th%20National%20Communication%20of%20Turkey.pdf

28) Program published in the Official Gazette on 25 October 2022. Access to the Climate Portal is through <https://iklimportal.gov.tr/>

that can be paired with socioeconomic data on risks, vulnerability, and impacts. The datasets provided on the Portal should be properly curated and regularly updated to ensure confidence by the private sector in their reliability. The Portal should also enable access to the information contained in existing but inaccessible data management infrastructure, and provide links to other types and sources of data and information required for public and private sector investment, such as those provided by Meteorological Services and the State Hydraulic Works, and external resources such as the WB's "ThinkHazard!" tool and the WB Climate Knowledge Portal.

Clear and Credible Policy Signals

The National Climate Change Adaptation Strategy and Action Plan (NASAP) provides for an overarching vision and strategic areas of intervention on adaptation in Türkiye. However, there are inconsistent policy signals related to the ambition of the Government of Türkiye (GoT) with respect to climate change, especially for adaptation. Policy settings are generally not well-known by the private sector, nor are they mainstreamed into the National Development Plan (NDP) or sectoral planning. The national development banks, the Sovereign Wealth Fund (Türkiye Varlık Fonu), and Turk Eximbank should be more closely involved in formulating the national strategy and investment pipeline for adaptation as current engagement from these actors is limited in policy development in adaptation. Including these actors will encourage closer alignment and coordination with sustainable finance initiatives regulated by key Turkish financial authorities such as Banking Regulation and Supervision Agency and Capital Market Board, and the wider Turkish insurance industry to create a harmonized approach to sustainable finance and climate adaptation investment. The NASAP alongside the National Climate Change Strategy are currently being updated by the DoCC. To create momentum for private sector investment in adaptation, it is important to engage the private sector as early as possible in the update of the policy framework.

Currently, the GoT is working towards mainstreaming strategies and plans of sectoral actors and local governments to better coordinate efforts and send a coherent message to the market. Here, the development of prioritized and costed sectoral and local action plans could lay the groundwork for producing a national adaptation investment plan and ensure that funding, both public and private, is directed towards those areas with the most adaptation impact.

Still, the lack of common understanding of what constitutes an adaptation and resilience project is another important constraint on private investment. Although there is limited clarity on how the green taxonomy will address adaptation and

resilience, this will be a critical step in developing a unifying language and definition as well as defining the remit for private sector participation in delivering the GoT's priorities on adaptation. DoCC is currently establishing a climate risk disclosure framework and green taxonomy. It is suggested that the taxonomy considers the significant advances made in recent years by multilateral development banks and other private investors such as Institutional Investors Group on Climate Change in introducing metrics and approaches for identifying, assessing and tracking climate resilient and adaptation investment, including from private investment. It should particularly take note of the European Union Taxonomy for Sustainable Activities technical screening criteria aligned to Climate Change Adaptation, to support interoperability with what is expected to be a key informant to the global taxonomy approach. A taxonomy will help direct financing to adaptation and resilience investments, making it easier for some investors to participate.

Predictable and clear policy signals are key for fostering the engagement of the private sector in climate finance. In Türkiye, it includes developing cross-sectoral strategies and a specific national adaptation taxonomy to help guide and unlock private capital to meet GoT adaptation needs.

An Overarching Legal and Regulatory Framework

Policy direction needs to be supported by a robust legal and regulatory framework. While the GoT has made some progress in this regard, there are still actions to be considered to improve the regulatory framework. For example, in July 2022, Türkiye amended its Environmental Impact Assessment (EIA) regulation making the assessment of the effects of climate change on investments mandatory prior to project approval. However, the 2017 Regulation on the Strategic Environmental Assessment (SEA) is yet to be updated. SEA is an important tool to integrate climate resilience and adaptation into national and sectoral development plans. Climate resilience and adaptation must be considered at an earlier stage of the infrastructure planning cycle at both national and sub-national levels. This includes moving the evaluation of infrastructure asset vulnerability to climate risks already at the project location phase. Infrastructure systems can be made more resilient by making prudent choices about where and what to build and which assets to upgrade, and by prioritizing green infrastructure where possible.

The incorporation of climate adaptation clauses within public procurement and PPP tenders, along with their inclusion in the evaluation processes would also provide an important entry point for ensuring private actors consider physical climate risks and adaptation measures in the design and management of infrastructure assets. Currently, companies only incorporate climate considerations on a voluntary basis

or because of requirements from IFIs that have an equity stake in the projects.²⁹ PPP contracts often use force majeure as the fallback option instead of considering climate resilience and adaptation considerations in project design, operation and maintenance (O&M) standards and KPIs of large capital investment projects. This apportions greater risks and costs to the GoT. Integration of climate considerations would serve as a pivotal entry point, ensuring that private entities factor in the assessment of physical climate risks and the implementation of adaptation strategies when conceptualizing and managing infrastructure assets.

Moreover, the development of a regulatory framework for mandatory climate-related risk disclosure, targeted primarily at large corporations, asset managers and asset owners, is an important step towards increasing the private sector's appetite for climate-related investments. This framework should encourage Turkish corporations and other stakeholders to assess and disclose climate-related risks and opportunities. Disclosure on climate risks and opportunities, aligned to the structure of the Task Force on Climate-related Financial Disclosure (TCFD)³⁰ recommendations, ensures that consistent information is available to understand how organizations are assessing risks and improving their resilience.

Economic and Financial Incentives

Despite growing climate awareness, private sector actors in Türkiye remain hesitant to invest in climate change adaptation, due to perceptions that the costs of investing in adaptation are too high or that the returns on investment are too low. This is particularly the case where there is a sizable upfront investment such as large infrastructure projects. The uncertainty over the timing and extent of climate disasters also means that pay-off from resilience investments are uncertain.

The incentives from government policy play a role in the attractiveness of adaptation investments. The only environmental tax in Türkiye is the ÇTV (Environment Cleaning Tax) on households, workplaces and other buildings based on the amount of water they use (Article 44, Law on Municipal Revenues). In addition, the Capital Market Board applies a registration fee discount of 50 percent for green bonds and green lease certificates to be issued under the BIST (Istanbul Stock Exchange).³¹

29) Norton Rose Fulbright, "Doing business in Turkey: Environmental, social and corporate governance (ESG)," (2023). Available at <https://www.nortonrosefulbright.com/en/knowledge/publications/f049ea76/doing-business-in-turkey-environmental-social-and-corporate-governance-esg>; Talu and Kocaman, "Turkey's Climate Change Policy, Legal and Institutional Framework," (2019). Available at https://www.iklimin.org/wp-content/uploads/2020/03/modul_04_en-1.pdf

30) TCFD is created by the Financial Stability Board (FSB), which is an international body that monitors and makes recommendations about the global financial system.

31) Borsa Istanbul, "Fee Schedule," (2022). Available at: <https://www.borsaistanbul.com/files/borsa-istanbul-fee-schedule.pdf>

A large number of perverse incentives, such as taxes or subsidies are also present which undermine the business case for investing in adaptation. For instance, water tariffs in Türkiye do not consider the lifecycle costs of more extreme weather and climate change on water utility assets and service provision over time.³²

The GoT can mobilize a diverse toolkit of financial and non-financial incentives to motivate private sector engagement in adaptation efforts. Such incentives should encourage businesses to adapt their operations and business models. Simultaneously, it is crucial to conduct a holistic review of existing tax breaks, import/export duty reductions, public grants, and risk guarantee schemes across key priority adaptation sectors. By refining and expanding these incentives, Türkiye can create a more favorable investment environment, spurring proactive climate adaptation measures. Additionally, building the capacity of the VC and PE sectors to understand climate risks and opportunities is essential. Facilitating access to finance for start-ups and SMEs and developing a tailored adaptation taxonomy for VC and PE firms will enable more systematic assessment and support for climate adaptation innovations. By developing an ecosystem of start-ups and SMEs which can provide adaptation solutions and services will further drive Türkiye's resilience efforts, while promoting innovation and sustainability. This could, for example, be achieved by designing and delivering, in partnership with existing incubators or accelerators, a mentoring program targeted at selected enterprises.

The Future of Climate Financing in Türkiye

There are ample opportunities in Türkiye for the private sector to invest in adaptation either as adaptors, solution providers or financiers. As adaptors, the private sector is driven by business continuity and risk management, as financiers, the private sector can capitalize the investment need in the real economy, and as innovators the private sector is positioned to solve problems arising from climate change while generating revenue. To foster stronger private sector involvement in adaptation financing, the GoT can help foster enabling conditions by providing clearer policies, overarching regulations, and enhanced policy engagement on climate financing. Together, the public and the private sectors can ensure that Türkiye addresses its adaptation needs in the future to minimize the harm from a changing climate.

32) Organisation for Economic Co-operation and Development, "Agricultural Water Pricing: Turkey," (Paris: OECD Publishing, 2010). Available at: <https://www.oecd.org/turkiye/45016347.pdf>