



The World Bank

Türkiye Climate Resilient Forests Project (P179345)

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Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 26-Apr-2023 | Report No: PIDA35516



BASIC INFORMATION

A. Basic Project Data

Country Turkiye	Project ID P179345	Project Name Türkiye Climate Resilient Forests Project	Parent Project ID (if any)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date 27-Apr-2023	Estimated Board Date 16-Jun-2023	Practice Area (Lead) Environment, Natural Resources & the Blue Economy
Financing Instrument Investment Project Financing	Borrower(s) Republic of Türkiye	Implementing Agency Directorate General of Forestry (OGM)	

Proposed Development Objective(s)

The Project Development Objective is to strengthen institutional capacity for integrated fire management and to increase resilience of forests and people to wildfires in targeted areas of Türkiye, and to respond promptly and effectively in the event of an Eligible Crisis or Emergency.

Components

Component 1: Strengthening institutions and society for wildfire and forest resilience.

Component 2: Investments in climate resilient forests in targeted areas

Component 3: Project Management, Monitoring and Evaluation.

Component 4: Contingent Emergency Response Component, CERC

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	400.00
Total Financing	400.00
of which IBRD/IDA	400.00
Financing Gap	0.00

DETAILS

World Bank Group Financing



International Bank for Reconstruction and Development (IBRD)

400.00

Environmental and Social Risk Classification

Moderate

Decision

The review did authorize the team to appraise and negotiate

B. Introduction and Context

Country Context

1. **Türkiye is a large, upper middle-income country with a record of strong growth; however, both internal and external developments have recently put its economic prospects at risk.** Fast economic growth tripled income per capita to a peak of USD 12,000 in 2015, making Türkiye the world's 19th largest economy. However, since 2016, macroeconomic shocks and adverse geopolitical events have slowed the country's development progress. Poverty rates under the upper-middle income line fell from 42.0 to 1.0 percent between 2003 and 2018 but increased to 12.6 percent in 2019. Unemployment has remained high—over 10 percent since 2015—and is compounded by low labor force participation, especially for women and youth. The incipient recovery starting in 2019 was then cut short by the COVID-19 crisis, with significant economic hardship, contraction of GDP, high job losses, and renewed pressure on macro-financial indicators. In 2021, Türkiye experienced an accelerating economic recovery with the economy growing 11.4 percent, external and fiscal balances improving, and unemployment falling to pre-pandemic levels.¹ However, Türkiye has continued to experience rising macro-financial volatility, including depreciation of the lira and high inflation. The war in Ukraine has also added to the inflationary and destabilizing pressures experienced by the country as well as significant geo-political tensions in the region. While gross general government debt to GDP fell to a low of 28 percent in 2016, currency depreciation, COVID-19 outlays, and growing borrowing costs drove it to 42 percent in 2021.²

2. **The impact of this economic volatility is likely to amplify existing income and labor disparities.** The poverty rate rose to an estimated 12.5 percent in 2020, and while expected to decline from this COVID-19 related peak, current conditions are putting pressure on poorer households. During the 2018-2019 economic turmoil, the largest increases in poverty were witnessed by the less developed regions of the country¹. Furthermore, during the COVID-19 crisis, female employment and labor force participation tended to decrease more than male employment and labor force participation.

3. **Türkiye is vulnerable to natural hazards, particularly earthquakes but also increasingly climate-related hazards, which have significant social and economic impacts and hamper the country's ability to recover from recent multiple crises³.** In February 2023, a series of very large earthquakes followed by thousands of aftershocks hit southeast Türkiye and Syria⁴, causing massive damage and economic impacts. The earthquake region was home to 14 million Turkish

¹ World Bank, 2022. Turkey Economic Monitor February 2022: Sailing against the Tide. Washington, DC.

² World Bank Group, 2022. Türkiye Country Climate and Development Report. Washington, DC.

³ World Bank, 2023. Türkiye Adaptation and Resilience Assessment: A Whole-of-Economy Approach to Climate and Disaster Risks.

⁴ The February 6, 2023 earthquakes were of magnitude 7.8 and 7.5 while the February 20, 2023 one was of magnitude 6.7, based on figures from the United States Geological Survey Earthquake Catalog (<https://earthquake.usgs.gov/earthquakes/search/>).



citizens (16.4 percent of the country's population) and 1.8 million Syrians under Temporary Protection (SuTPs), contributing 9.4 percent to national GDP and 8.6 percent of exports in 2022. The earthquakes caused over 50,000 fatalities and catastrophic damage to critical infrastructure, social facilities, housing, and livelihoods in the affected areas, causing the displacement of over 3.3 million people⁵. A World Bank (WB) Global Rapid Post-Disaster Damage Estimation (GRADE) prepared within two weeks of the disaster, estimated initial direct physical damages of the earthquakes at US\$34.2 billion, the equivalent of 4 percent of Türkiye's 2021 GDP⁶. A more in-depth needs and loss assessment conducted by the Government of Türkiye (GoT) with support from the European Commission, United Nations, and the World Bank Group (WBG) estimated the recovery and reconstruction needs at US\$81.5 billion⁷. The impacts of the earthquakes are particularly detrimental given that the most affected provinces also have some of the highest poverty rates in Türkiye⁸ and host almost half of all SuTPs in the country.⁹ A significant portion of the population is now at risk of falling further into poverty due to financial difficulties from loss of assets paired with a rise in unemployment and under-employment as a result of the earthquakes. The impact on macro-financial conditions of the February 2023 earthquakes is still unfolding, with further implications expected for growth, labour markets and poverty, the financial sector, and fiscal and external balances. As a result, the WB is providing assistance to the country's recovery and reconstruction efforts through a comprehensive package of support. This project is a part of that support and its design was adapted in response to the impacts of the earthquakes (Box 1).

Box 1. The World Bank's program to support Türkiye's reconstruction efforts from the February 2023 earthquakes.

The WB is providing an overall package of support that is structured around reconstruction of infrastructure, provision of public services, and economic recovery. The overall package includes mobilizing support through projects that were already active before the February 2023 earthquakes and delivering new projects on a fast-track basis to provide quick response, as well as analytical work and technical assistance. Specifically, the package encompasses the following:

- ✓ **Mobilization of targeted support through the Bank's existing portfolio in the country comprised of 24 operations for US\$ 8.5 billion**, including through Contingent Emergency Response Components (CERC) and Project Restructurings. Within this portfolio, the Disaster Risk Management in Safe Schools Project, the Safe Schooling and Distance Education Project, and the Health System Strengthening and Support Project are being repurposed or rebalanced to support the provision of human development services. In addition, the GoT can activate the CERCs under the Climate and Disaster Resilient Cities Project and the Earthquakes, Floods, and Wildfire Emergency Reconstruction Project to support urgent infrastructure repairs and the provision of basic services. In addition, the ongoing Support to Labor Market Transition Project, the Formal Employment Support to Agriculture Sector Project, and the Formal Employment Creation Project also support social protection and labor activities in the earthquake region.
- ✓ **Revision of the FY23 lending pipeline** adding new operations and adapting already planned operations to provide more targeted support to earthquake recovery. In terms of new fast track lending operations, this includes the Earthquake Recovery and Reconstruction Project (US\$1 billion) and the Post-Earthquake Micro, Small, and Medium Enterprises Recovery Project (US\$450 million). In terms of existing lending operations, the Green Industry Project (US\$450 million) was adapted to provide financing to eligible firms located in the earthquake region to support a greener economy and enforce stricter building codes; and the Public and Municipal Renewable Energy Project (US\$500 million) includes a component that can finance renewable

⁵ The epicenter of the first two earthquakes was in Kahramanmaraş Province with neighboring provinces of Adana, Adiyaman, Diyarbakir, Elazığ, Gaziantep, Hatay, Kilis, Malatya, Osmaniye, and Şanlıurfa all suffering damages. The epicenter of the third earthquake was in Hatay causing further damage to the region.

⁶ Available at: <https://documents.worldbank.org>

⁷ Available at <https://www.sbb.gov.tr>

⁸ Defined as below US\$6.85 per day, Source: Survey of Income and Living conditions 2020 (SILC 2020)

⁹ <https://en.goc.gov.tr/temporary-protection27>



energy installations in affected municipalities as part of the reconstruction of public buildings. The proposed Climate Resilient Forests Project (US\$400 million) has also been adjusted to respond to the needs arising following the earthquake, including: (i) an increased financing envelope, along with the expansion of targeted areas with the inclusion of provinces in the earthquake-affected zone; (ii) an increase in the allocation towards livelihood support activities in rural areas in the earthquake affected-zone; (iii) expansion of the scope of search and rescue/response capacity at national scale to ensure preparedness of other locations exposed to wildfires and other disasters; and (iv) inclusion of a CERC. These operations are all planned for consideration by the World Bank's Board of Directors in June 2023.

- ✓ **Analytical work and technical assistance:** Immediately following the earthquakes, the WB mobilized its knowledge and convening power through the delivery of the GRADE report, followed by support to the government's assessment report in coordination with the European Union (EU) and United Nations Development Program in preparation for the March 2023 donors conference held in Brussels and convened by the EU. The Bank secured US\$1 million in grant resources from the Global Facility for Disaster Reduction and Recovery (GFDRR), from its partnership with the United States Agency for International Development, for technical assistance to support the post-earthquake assessments informing the design of the WB's Earthquake Recovery and Reconstruction Project as well as planning, prioritization, and implementation of post-disaster reconstruction investments, with a focus on mainstreaming resilience, building-back-better principles and good practices related to social inclusion and citizen engagement. In addition, the WB has an existing technical assistance program supporting policy and regulatory reforms to enhance resilience of the urban built environment in Türkiye financed by a \$825,000 grant from GFDRR under the Japan-WB Program for Mainstreaming Disaster Risk Management in Developing Countries.

4. **The country's exposure to climate-related hazards is also considered high and further contributes to the country's vulnerability.** These will likely be felt through higher food prices and reduced agricultural productivity that will again disproportionately impact poor and vulnerable groups¹⁰. Floods, wildfires, storms, and landslides are frequent events in Türkiye and result in localized losses¹¹. Climate models predict worsening of already observed trends, including increasing anomalies in precipitation patterns with increased incidence of extreme rain and flooding on the one hand, and protracted drought, extreme heat, and wildfires on the other¹². In 2021, Türkiye's south and west regions faced the most severe wildfires¹³ recorded in history and catastrophic flooding in the north region. Increased incidence of wildfires and decreased rainfall for hydropower may further contribute to greenhouse gas (GHG) emissions in the future, undermining Türkiye's commitment to reach net zero emissions in 2053. As climate change progresses, these disasters will likely worsen and have a growing economic impact, aggravated when combined with other natural events such as the devastating earthquakes of February 2023. Hence, comprehensive management of climate and disaster risks is essential for Türkiye to continue to grow and to reach high-income country status in the face of cascading disaster risks. As such, the World Bank (WB) has been applying a programmatic approach to support Türkiye's increasing climate change ambition (Box 2).

¹⁰ Dellar I. and Unuvar I., 2019. Effect of Climate Change on Food Supply of Turkey. J. Environ. Prot. Ecol. 20. 292-700.

¹¹ World Bank, 2023. Türkiye Adaptation and Resilience Assessment: A Whole-of-Economy Approach to Climate and Disaster Risks.

¹² Republic of Türkiye. Ministry of Environment and Urbanization, 2018. Seventh National Communication to the UNFCCC.

¹³ The term "wildfire" refers to the definition in (FAO, 2010. Wildland Fire Management Terminology): "Any unplanned and uncontrolled wildland fire which may require suppression response, or other action according to agency policy" (adapted). In the European Union the term "forest fire" is defined as "uncontrolled vegetation fires spreading wholly or in part on forest and/or other wooded land" (Camia A., Durrant T., San-Miguel-Ayanz J., 2014. The European Fire Database Technical specifications and data submission. Joint Research Centre of the European Commission). These two terms are used interchangeably in this PAD.

**Box 2. The World Bank's Program to Support Türkiye's climate commitments**

Türkiye's Climate commitments. Türkiye ratified the Paris Agreement in October 2021 and committed to achieving net zero emissions by 2053. The Climate Memorandum of Understanding (MOU) signed with six Development Partners in October 2021 is supporting the implementation of Türkiye's climate ambitions on mitigation, adaptation, and just transition.

The World Bank's programmatic support towards green transition in Türkiye.

- ✓ **Analytics and Policy Advisory:** In June 2022, the World Bank Group (WBG) published the Türkiye Country Climate and Development Report (CCDR), the WBG's first CCDR¹⁴. The Türkiye CCDR outlines a potential Resilient Net Zero Pathway (RNZP) in line with the country's net zero goal, its adaptation and resilience needs, and economic growth and development. It was prepared in coordination with the multi-year Türkiye Green Growth Analytical and Advisory Program - a platform to engage with Government on green transition more broadly. Among others, the Green Growth Program is supporting the Government to develop its Long-Term Strategy (LTS) for decarbonization and is informing the 12th National Development Plan.
- ✓ **Investments:** The signing of the Climate MOU enabled the identification of multiple new IBRD projects totaling well over \$2 billion, aimed at supporting sectoral transformations in energy, transport, industry, urbanization, and water and landscape management, the focus of this project. New projects also aim at leveraging green finance and engaging the private sector, building institutional capacity, and ensuring that the green transition is socially inclusive.

Project contribution to Türkiye's Resilient Net Zero Pathway.

- ✓ The proposed project is fully aligned with the CCDR by advancing its identified priority number 4 of protecting carbon sinks by increasing the resilience of forests to fires and restoring degraded landscapes. This helps maximize carbon sequestration from forest landscapes which is critical for Türkiye's pathway to decarbonization and resilience. The CCDR highlights that Türkiye's carbon sink potential, if better managed, can make a significant contribution towards carbon neutrality by compensating for residual emissions from other sectors by 2053, and even opening up opportunities for carbon trading.
- ✓ Improved forest management will help protect the people and country from the risk of increasingly frequent and devastating wildfires, such as those in 2021. This is a key source of climate vulnerability identified by the CCDR. It will also create economic opportunities for remote and often poor communities in rural areas, which in turn enhances their resilience to shocks from climate and other disasters, such as the extreme wildfires of 2021 and the earthquakes of February 2023.

Sectoral and Institutional Context

5. **Large wildfires are increasing across the world, in large part due to climate change.** As global warming increases so does the frequency and intensity of weather conditions (hot, dry, and windy) conducive to wildfires¹⁵. When combined with increases in other factors such as number of ignition sources and high levels of available fuel, the threat of wildfires becomes more severe, leading to extreme wildfires of growing intensity, longer periods, and spreading in range (known as megafires)¹⁶. Such extreme wildfires have occurred in the last five years in countries that are normally fire-prone (e.g., Chile and Portugal in 2017; USA and Greece in 2018; Indonesia and Siberia in 2019; Australia in 2020; Canada, USA and Mediterranean countries in 2021 and 2022¹⁷); however, countries that typically experience much less burning have also seen wildfires in recent years, including across most of Europe (e.g., Sweden, U.K., and Germany, among others)¹⁸. Climate change and land-use change are projected to make wildfires more frequent and intense, with a global increase of extreme fires up to 14 percent by 2030, 30 percent by the end of 2050 and 50 percent by the end of the century¹⁹.

¹⁴ World Bank Group, 2022. Türkiye Country Climate and Development Report. Washington, DC.

¹⁵ IPCC, 2021. Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

¹⁶ UNEP, 2022. Spreading like Wildfire – The Rising Threat of Extraordinary Landscape Fires. A UNEP Rapid Response Assessment. Nairobi.

¹⁷ World Bank, 2020. Managing Wildfires in a Changing Climate. Washington, DC.

¹⁸ Oom, D., et al., 2022. Pan-European wildfire risk assessment. Joint Research Centre of the European Commission.

¹⁹ UNEP, 2022. Spreading like Wildfire – The Rising Threat of Extraordinary Landscape Fires. A UNEP Rapid Response Assessment. Nairobi.



6. **A part of the Mediterranean climate region, Türkiye is particularly vulnerable to forest fires.** Although they make up only 1 percent of the world's forests, Mediterranean climate landscapes are among the most fire-prone and fire-shaped on the planet due to the pattern of wet winters that lead to significant biomass growth and accumulation which then dries out and turns into combustible fuel during subsequent warmer seasons with particularly hot summers. With an area of 23 million hectares and expanding over the past decades²⁰, Türkiye's forests cover about 29.6 percent of the country's landmass. Approximately 12.5 million hectares (or 55 percent) of these forests are under high risk of wildfire, mostly located along the coastlines of the Mediterranean, Aegean, and Marmara regions and extending up to 160 kilometers inland. The underlying factors driving their vulnerability to wildfires include the presence of fire-prone species (sixty percent of Türkiye's forests contain species -mainly coniferous- that are sensitive to fires), long-lasting summer droughts that often exceed six months, low relative humidity levels, drying winds, and unfavorable land conditions (80 percent of Türkiye's land is considered rugged and mountainous)²¹. These conditions are similar to those that prevail during extreme wildfire events elsewhere in the Mediterranean climate region, namely California, south-eastern Australia, and Chile. There is also a strong spatial overlap between forest fires and socioeconomic vulnerability in Türkiye,²² with 23,111 villages and 7.5 million people (among the poorest in the country) living in and around forest lands in 2021, for which forest resources are an important source of livelihood²³.

7. **An increased risk of megafires compounded by climate change may overwhelm Türkiye's existing forest fire management capacity.** The 2021 wildfires were the largest in Türkiye's recorded history with over 139,500 hectares of forests burnt throughout the year (15 times the average between 2008 and 2020²⁴), although the number of fires remained relatively the same (2,793). 2021 also included the largest single wildfire ever recorded in Türkiye of about 55,000 hectares. These wildfires triggered extensive evacuations, damaged urban, forestry and agricultural infrastructure, impacted 35 residential areas and hundreds of households with nine people reported to have died,²⁵ resulting in ecological and economic damage and loss, community, and business disruption. In addition to their direct impacts on Türkiye's forests and forest villages, many sectors such as the wood industry, tourism, hunting, mining, beekeeping, livestock, as well as health and food security were also affected.

8. **Türkiye's vulnerability to wildfires could hinder its climate change commitments.** Türkiye ratified the Paris agreement in 2021, and to achieve its 2053 net zero emissions target, it will need to include changes to maintain and maximize carbon sequestration from forest landscapes to balance significant residual emissions in hard-to-abate sectors²⁶. Carbon storage from forest management and harvested wood products currently offsets about 10–15 percent of total GHG emissions in the country²⁷. This carbon sink is vulnerable to forest fires and negative emissions (removals from the atmosphere) from forests are at risk if forest fires become increasingly frequent, while forest fires themselves also contribute large amounts of emissions. Achieving this carbon sequestration will require much better fire management and wildfire risk reduction, readiness, and response. Furthermore, burned areas can be enhanced as carbon

²⁰ FAO, 2020. Global Forest Resources Assessment 2020. Rome.

²¹ OGM, 2013. Forest Atlas. Ankara.

²² World Bank Group 2022. Türkiye Country Climate and Development Report. Washington, DC.

²³ World Bank, 2017. Poverty, Forest Dependence and Migration in the Forest Communities of Turkey. Washington, DC.

²⁴ San-Miguel-Ayanz, J., et. al., 2022. Forest Fires in Europe, Middle East and North Africa 2021. Joint Research Centre of the European Commission.

²⁵ Turkish Red Crescent Information Bulletin. Turkey Wildfires – 10.08.2021.

²⁶ World Bank Group. 2022 Türkiye Country Climate and Development Report. Washington, DC: World Bank Group

²⁷ Türkiye 2022 National GHG Inventory Report (NIR) to the UNFCCC. Ankara.



sinks with investments in landscape restoration through reforestation, forest rehabilitation, reducing fuels, and establishing buffer zones.

9. **Türkiye can benefit from strengthening its preparedness against the increasing risk of wildfires under climate change through a comprehensive wildfire management approach for shaping climate resilient forest landscapes.²⁸** “Integrated Fire Management” (IFM) has evolved as countries work to cope with wildfires and is a holistic approach to addressing forest fire issues that considers environmental, social, and economic interactions²⁹. IFM considers five elements (the 5Rs) that are aligned with the Sendai Framework for Disaster Risk Reduction 2015-2030³⁰, used in dealing with disasters and their management: (i) REVIEW - analysis of wildfire issues and identification of options for positive change; (ii) RISK REDUCTION – preventing wildfires by focusing resources on the underlying causes; (iii) READINESS – preparing to fight wildfires; (iv) RESPONSE – ensuring appropriate responses to unwanted or damaging wildfires; and (v) RECOVERY – restoring community welfare, infrastructure and fire-damaged landscapes. IFM and the 5Rs provides a flexible framework that can enable the constraints that affect forest fire management in Türkiye to be addressed systematically. This Project therefore is expected to deliver a model for IFM in targeted areas of Türkiye based on international best practices that can be replicated in other areas of the country and possibly elsewhere in the world.

C. Relevance to Higher Level Objectives

10. **The proposed project is well-aligned with the FY18-21 World Bank Country Partnership Framework (CPF) for Türkiye (Report No. 11096-TR; discussed at the Board on August 29, 2017) that was extended through the Program and Learning Review (PLR) (Report No. 14253-TR; discussed on March 12, 2020) to cover the FY22-23 period.** In the CPF, support for Türkiye is prioritized around the three focus areas of growth, inclusion, and sustainability to achieve sustainable and inclusive growth. The proposed project is well-aligned with the focus area of sustainability, and more specifically the CPF objectives of “increased sustainability of infrastructure assets and natural capital” and “increased sustainability and resilience of cities”³¹. The project is also aligned with the RNZP outlined in the Türkiye CCDR which focuses on six climate-specific priorities, one of which is to enhance carbon sinks in forests and landscapes Error! Bookmark not defined.. The project will also contribute to the WBG Global Crisis Response Framework paper,³² underpinned by the WBG Green, Resilient and Inclusive Development (GRID) approach. Specifically, it will contribute to Pillar 3 on ‘Strengthening Resilience’ by identifying and supporting paths to build long-term resilience.

11. **The project is also aligned with the sectoral objectives laid out in several national strategies and plans as well related global commitments.** The project is aligned with Türkiye’s Eleventh Development Plan (2019-2023), specifically the objective of “strengthening the capacity to fight diseases and pests and fires in forestry”, and with Türkiye’s Climate Change Strategy (2010-2023) and National Climate Change Adaptation Strategy and Action Plan (2011-2023) which identify “protection of forests against fires” as one of their objectives. The project will contribute to Türkiye’s commitments under the Paris Agreement that was ratified in 2021; specifically, Türkiye submitted its revised NDC in 2022

²⁸ Wunder, S. et al. 2021. Resilient landscapes to prevent catastrophic forest fires: Socioeconomic insights towards a new paradigm. *Forest Policy and Economics* 128 (2021).

²⁹ FAO, 2019. FAO Strategy on Forest Fire Management. Rome.

³⁰ <https://www.unrr.org/implementing-sendai-framework/what-sendai-framework>

³¹ World Bank Group, 2017. Country Partnership Framework for Türkiye for FY18-21.

³² WBG, 2022. Navigating Multiple Crises, Staying the Course on Long-Term Development: The World Bank Group’s Response to the Crises Affecting Developing Countries. Washington, DC.



that listed forestry as one of the areas for action to achieve its 2053 net zero emission targets³³. The project is also aligned with OGM's Strategic Plan (2019-2023) and specifically its targets to increase prevention and suppression measures against forest fires. The project is also aligned with the Türkiye Disaster Risk Reduction Plan (2022-2030) which aims to disseminate functional fire management plans throughout the country, to benefit from information technologies in the protection of forests and to develop decision support systems, to increase measures for the prevention of forest fires, to strengthen the response capacity, and to develop the volunteer system to combat forest fires and to establish international cooperation for capacity building. Lastly, the project is aligned with Türkiye's targets under the United Nations Decade on Ecosystem Restoration which aims to prevent, halt, and reverse ecosystem degradation worldwide³⁴, as well as with the UN Strategic Plan for Forests (2013-2030) and the UN Sustainable Development Goals.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

The Project Development Objective is to strengthen institutional capacity for integrated fire management and to increase resilience of forests and people to wildfires in targeted areas of Türkiye, and to respond promptly and effectively in the event of an Eligible Crisis or Emergency.

Key Results

12. The key indicators to measure the PDO-related outcomes are:
 - i. National Integrated Fire Management Strategy ratified and operational (Yes/No)
 - ii. Integrated Fire Management Plans developed and/or updated for targeted areas (Number)
 - iii. Forest area with increased wildfire resilience in targeted areas (Hectares)
 - iv. Vulnerable households benefitting from improved livelihood opportunities supported by the Project (Number)

D. Project Description

13. **Component 1: Strengthening Institutions and Society for Wildfire and Forest Resilience (US\$26.8 million).** The objective of this component is to apply Review and Analysis and Readiness to make society, institutions, and forests better prepared for more frequent and severe wildfires that are exacerbated by climate change, through review and revision (as appropriate) of policy and regulations, institutional strengthening and coordination, training and capacity building, and research and technology development.

14. **Subcomponent 1.1. Strengthening the Institutional Framework for IFM through Review and Analysis (US\$17.8 million).** This subcomponent aims to strengthen the institutional framework and knowledge base for IFM and to establish strategies for appropriate responses to large wildfires at both national and local level. Activities under this subcomponent will include the following: (i) review and preparation of revisions to existing policy, legal and institutional frameworks (i.e., policies, legislation and regulations) on forest fires and related sectors to identify and address gaps in responding to emerging wildfire risks, and submission to relevant authorities for decision; (ii) preparation of a National IFM Strategy for Türkiye and updating OGM's National Forestry Program (2024-2043) to include climate, forest and wildfire resilience considerations; (iii) updating Fire Management Plans for Forest Operational Directorates in targeted areas; (iv) reviewing

³³ Republic of Türkiye, 2022. Nationally Determined Contribution to the UNFCCC.

³⁴ <https://www.decadeonrestoration.org/>



and strengthening of the Incident Command System (ICS) approach for Türkiye based on international best practices; (v) strengthening the capacity for fire cause investigation and attribution for Türkiye; (vi) carrying out studies to increase knowledge on difference aspects of forest and wildfire resilience including climate change risks and impacts on forest carbon stocks, incorporating biodiversity and ecosystem services in forest management planning, and developing a climate change adaptation strategy for forests, among others.

15. Subcomponent 1.2. Increasing Readiness for IFM through Technology and Capacity Building (US\$9 million). This subcomponent aims to strengthen the readiness for addressing extreme wildfires through improved technologies, awareness of and capacity for key elements of IFM within OGM and other stakeholders in Türkiye. Activities under this subcomponent will include the following: (i) development of a digital decision support system for IFM based on state of the art technologies, including to enhance the forest fire danger rating and forest fire detection systems for improved wildfire prediction and resource allocation for effective response; (ii) design and delivery of training programs on IFM and ICS, for OGM and other concerned agencies, local authorities, forest villagers and other stakeholders; (iii) strengthening of OGM's Search and Rescue Teams and voluntary forest fire brigade system to become adequately skilled and equipped based on international best practices and relevant successful experiences; and (iv) carrying out a national communications and public awareness campaign on wildfires and climate change taking into account the role of the public in the activities during and after forest fires, including carrying out educational activities for the younger population through establishment of forestry educational schools in targeted areas.

16. Component 2: Investments in Climate Resilient Forests in Targeted Areas (US\$366.4 million). This component will support investments in climate resilient forests aimed at reducing risk, enhancing response capacity, and restoring landscapes affected by wildfires in targeted areas using a balanced approach between prevention and suppression. These investments will also improve forest and community resilience to future wildfires under the increasing risks of climate change. The targeted areas of the project will be the areas of highest priority in the country based on OGM's wildfire risk assessment process.³⁵ Investment packages for each of the "5Rs" will be customized to targeted areas according to their needs and implemented through IFM plans to be developed under the project, allowing for future scalability and replicability. OGM's Headquarters based in Ankara will have overall management supervision of this Component, though implementation will be carried out by the Regional Directorates located in each of the targeted areas. OGM has identified the Regional Directorates of Adana, Antalya, Balıkesir, Çanakkale, Hatay, İzmir, Kahramanmaraş, Mersin, and Muğla as priority targeted areas. All these Regional Directorates have forests located along the coastlines of the Mediterranean, Aegean, and Marmara regions and are identified as "very high risk" in the Forest Fire Risk Map of Türkiye. Administratively, they cover the provinces of Adana, Antalya, Aydın, Balıkesir, Çanakkale, Gaziantep, Hatay, İzmir, Kahramanmaraş, Kilis, Manisa, Mersin, Muğla and Osmaniye.

17. Subcomponent 2.1. Scaling-up Wildfire Risk Reduction (US\$87.8 million). This subcomponent will support investments aimed at reducing wildfire risk in targeted areas through managing the fuel load that feeds wildfires and developing options for reducing the spread of forest fire ignitions. Activities under this subcomponent will include the following: (i) supporting the maintenance of the forest road network to improve forest access during the fire season; (ii) silvicultural interventions to increase wildfire and forest resilience in existing forests, such as: firebreaks and boundary lines in selected areas to address the edges of roads and transition points of electrical communication lines; fuel load

³⁵ OGM's Department of Combating Forest Fires uses a wildfire risk assessment process that considers and combines data sets on frequency and size of past fires, topography, vegetation and fuels, rainfall and forest fire danger rating from the DG of Meteorology.



management interventions (e.g., thinning, grazing); creating buffer zones with more fire-resilient species between forest areas, settlements and agricultural areas; protecting or creating natural openings in forests; (iii) engagement of local communities and stakeholders in risk reduction behaviors through training and awareness raising activities on topics such as the burning of agricultural residues by farmers, campfire management in recreation areas, among others, including a dedicated training program for women on Occupational Health and Safety issues in forestry and wildfire operations.

18. Subcomponent 2.2. Strengthening Operational Systems for Response (US\$163.4 million). This subcomponent will support selected investments (building on existing capacities) aimed at strengthening the ability to respond to, suppress and contain large wildfires before spreading out of control. Activities under this subcomponent will include the following: (i) improving forest fire detection time and capacity by modernizing surveillance and detection approaches through unmanned watchtowers; (ii) improving first response time for forest fires by enhancing communications and dispatching systems through the replacement of old equipment and the establishment of digital radio communication systems; (iii) upgrading and increasing land vehicles and machinery to strengthen wildfire response capacity, as well as response and recovery capacity to other disasters (i.e., floods, earthquakes, among others).

19. Subcomponent 2.3. Resilient Recovery of Landscapes and Livelihoods Affected by Wildfires (US\$115 million). This subcomponent will support investments aimed at the recovery and restoration of landscapes and livelihoods affected by wildfires. Landscape restoration activities will be implemented in fire-affected areas contributing to enhanced carbon sequestration. Forest villages and other communities will be provided with enhanced economic opportunities through training, forest-based livelihoods and employment that contribute to sustainable local development. Activities under this subcomponent will include the following: (i) establishment of a dedicated laboratory to carry out research and development and act as a gene bank for the identification and production of climate and fire-resilient tree species; (ii) restoration of areas burned by wildfire using climate-smart techniques to increase resilience to climate change and other stressors (e.g. pests), as well as to conserve biodiversity and the generation of ecosystem services post-fire (e.g., flood protection, soil erosion, etc.); (iii) supporting livelihood and employment opportunities for vulnerable households in forest villages by providing grants and microcredits for a select menu of investments to incentivize sustainable management of natural resources in line with IFM plans. Livelihood support activities will be implemented through the expansion of OGM's Forest Village Relations Program (ORKOY) in the targeted areas (particularly in earthquake-affected areas), which has an established history of operation for providing livelihood and employment opportunities to forest villages. Special attention will be paid to the lessons learned from the ongoing Türkiye Resilient Landscape Integration Project (TULIP) through which this Program is already been supported, including for differentiated supports to women-led entrepreneurial initiatives.

20. Component 3: Project Management, Monitoring and Evaluation (US\$6.8 million). This component will support incremental operating costs and other eligible expenses to ensure effective and efficient project implementation. Activities under this component will include: (i) project management support for OGM's Project Implementation Unit (PIU), including strengthening technical, fiduciary, environment and social capacities; (ii) support for compliance with environmental and social risk management, including grievance redress, gender aspects, and citizen engagement; (iii) maintenance of a project communication and visibility plan; (iv) monitoring and evaluation; (v) operational expenses related to the project.



21. **Component 4: Contingent Emergency Response Component (CERC) (US\$0).** This component is included in accordance with OP/BP 10.00 (Investment Project Financing), paragraphs 12 and 13, for contingent emergency response through the provision of immediate response to an Eligible Crisis or Emergency, as needed. It will allow the Government of Türkiye to respond promptly and effectively to an eligible emergency or crisis, that is a natural or human-made disaster or crisis that has caused or is likely to imminently cause a major adverse economic and/or social impact by requesting a rapid reallocation of project funds. The Project Operations Manual will specify the procedures for activating the CERC.

22. **Climate Co-Benefits and GHG analysis.** Each project component includes activities that directly support climate adaptation and mitigation and enhancing the resilience of forest landscapes and livelihoods to the impacts of climate change. As such, the project is fully aligned with the Paris Agreement and will generate significant climate co-benefits. Climate risk screening has been conducted and climate risks and vulnerabilities (wildfires, flooding, etc.) will be considered in the design of IFM plans. A GHG analysis was conducted for the targeted project areas based on IPCC Good Practice Guidance (GPG) and in line with the Türkiye CCDR RNZP approach. The Business-as-usual scenario (Without the Project) assumed that the trend of megafires such as the one that occurred in 2021 would continue stochastically, and project investments in resilience (With Project Scenario) would help prevent or suppress extreme wildfires to maintain the historical trend of annual burnt area before the 2021 megafire. The emission reductions generated by the project with 100% effectiveness based on these assumptions and including landscape restoration activities were estimated at 67.42 million tCO_{2eq} over 30 years and 2.25 million tCO_{2eq} annually. GHG results have been inputted into the economic analysis using the World Bank's Social Cost of Carbon Guidance³⁶.

23. **Gender.** Türkiye ranks 136 among 153 countries in the *Economic Participation and Opportunities* category of the Global Gender Gap Index³⁷, with labor force participation being among the lowest in OECD countries³⁸. Access to finance is another critical gender gap in Türkiye; for example, 58 percent of loans require collateral when the business is managed by a woman, versus 37 percent when the business is run by a man; while 35 percent of loan officers are more biased against women applicants, where gender bias is measured as any positive difference between the amount of money allocated to men versus women loan applicants³⁹. In Türkiye's forestry sector, the most important factors found to affect women's participation in forestry are their perception related to (i) forest dependence; (ii) quality of cooperatives; (iii) quality of forest organization; and (iv) forest quality⁴⁰. Furthermore, climate change acts as a threat multiplier to the livelihoods of women and girls in rural forest villages where they are more dependent on natural resources for their livelihoods, further contributing to rural out-migration with associated loss of income, employment and housing opportunities. Hence, to close the gender gap in access to finance and employment opportunities in the forestry sector, the project will provide a differentiated grant mechanism⁴¹ along with technical training to support women-led entrepreneurial initiatives in forest villages linked to non-timber forest products such as mushrooms, lavender, jam making, cheese making, handicrafts and dairy production, among others. This differentiated support is expected to increase the labor force participation rate, create decent job opportunities and increase incomes for women in rural

³⁶ World Bank, 2017. Social cost of carbon: Guidance Note for Investment Project Financing, Washington DC.

³⁷ World Economic Forum, 2019. Global Gender Gap Report 2020.

³⁸ World Bank, 2023. Türkiye Adaptation and Resilience Assessment: A Whole-of-Economy Approach to Climate and Disaster Risks.

³⁹ Salman A., Amalia D., et al., 2019. Gender Bias in SME Lending: Experimental Evidence from Turkey. *World Bank Group*.

⁴⁰ Atmış E., et al, 2007. Factors affecting women's participation in forestry in Turkey. *Ecol. Econ.*, 60 (4) (2007), pp. 787-796.

⁴¹ While the broader matching grants to be provided under Component 2.3 will be based on a combination of grants (20-50%) and low-interest loans (80-50%) at household level depending on a variety factors, the differentiated grant mechanism for women entrepreneurs will be based on 100% grant support.



forest areas, therefore strengthening their resilience to climate and disaster related shocks⁴². In addition to this, the broader livelihood support activities to be provided through matching grants at household level under Subcomponent 2.3 will also include women applicants as one of the prioritization criteria to be applied for support allocations.

24. Globally, it has been observed that the impacts of wildfire on health, approaches to wildfire response, risk perception and decision making have been found to differ between women and men: women face the highest health risks following exposure to wildfires⁴³; may have a higher perceived risk and fear levels during wildfire events;⁴⁴ and women firefighters also often face discrimination and challenges of ill-designed equipment and protective clothing that puts them at greater risk of injury⁴⁵. Hence, the project will also deploy gender-sensitive approaches in awareness campaigns and in implementation of the stakeholder and citizen engagement plans; and will empower willing women to participate in volunteer fire brigades and wildfire prevention and response plans⁴⁶ while providing tailored training for women considering their Occupational, Health and Safety (OHS) in wildfire and forestry management operations.

25. **Citizen Engagement.** The project will ensure the continuous and effective participation of stakeholders throughout each of the IFM '5Rs'. It will Review the causes of fires in a participatory way and solicit citizen feedback for the development of a National IFM Strategy. Accordingly, it will invest in Readiness through training and awareness raising for local people to create fire-adapted communities, including communication campaigns and educational activities with youth that will Reduce the risk of wildfires by considering the role of the public during and after forest fires. Furthermore, the project will empower citizens by enhancing community capacity to Respond to fires by expanding the volunteer brigade system, as well as training and equipping volunteers. This holistic engagement approach during planning and implementation of IFM activities is participatory in nature. Additionally, citizen feedback will be solicited via periodic online surveys to inform project activities and wildfire management strategies under an adaptive management approach. Furthermore, the project will support participation of forest villages in Recovery efforts by providing livelihood support opportunities through microcredits from OGM's Department for Forest Village Relations (ORKOY). ORKOY conducts an annual survey to assess beneficiary satisfaction on a scale of 1-5 to assess the success of the livelihood supports provided. These surveys will be expanded to also monitor the level of satisfaction of beneficiaries with their level of involvement in the design of livelihood support activities in order to close the two-way feedback loop. Finally, the Stakeholder Engagement Plan (SEP) also outlines mechanisms and actions to foster a two-way dialogue with local citizens and ensure their participation throughout the project's life cycle. The SEP also includes a Grievance Mechanism, through which citizen and/or beneficiary feedback (complaints, queries, recommendations) will be received and responded to within a timeline publicly stipulated by the project.

⁴² Such differentiated grant mechanisms for women have demonstrated positive income effects for housewives' incomes in forest villages according to OGM evaluation reports, for example by over USD 12,000 annually for entrepreneurial initiatives related to local handicrafts in the Maçka District, Trabzon Province.

⁴³ Evans, J., et al., 2022. Birth Outcomes, health, and health care needs of childbearing women following wildfire disasters: An integrative, state-of-the-science review. *Environmental Health Perspectives* 2022, 130.

⁴⁴ Tal Shavit, et al., 2013. The effect of a forest fire disaster on emotions and perceptions of risk: A field study after the Carmel fire, *Journal of Environmental Psychology*, Volume 36, 2013.

⁴⁵ UNEP, 2022. Spreading like Wildfire – The Rising Threat of Extraordinary Landscape Fires. A UNEP Rapid Response Assessment. Nairobi.

⁴⁶ Zabaniotou, A., et al., 2021. Observational Evidence of the Need for Gender-Sensitive Approaches to Wildfires Locally and Globally: Case Study of 2018 Wildfire in Mati, Greece. *Sustainability* 2021, 13, 1556.



Legal Operational Policies

Triggered?

Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

26. **The environmental risk is rated Moderate.** The project is expected to generate positive impacts by increasing disaster and climate risk resilience in the forests of Türkiye by promoting biodiversity, reducing soil erosion and landslides and contributing to better air quality. However, during the implementation phase, especially under Components 2.1 and 2.3, there will be environmental risks from minor construction activities which will be implemented in the project areas such as greenhouses, forest schools, laboratories etc.; silvicultural interventions for fuel and forest fire management (e.g., thinning and pruning), creating buffer zones with fire-resilient species between forest areas, settlements and agricultural areas; restoration of areas burned by wildfire, etc.

27. **Social risk is rated Moderate.** Some project activities could pose community health and safety risks. If the livelihood improvement activities under Component 2 are not well targeted there may also be a risk of unequal access to project benefits for vulnerable groups. Labor risk is low as the activities will be carried out by civil servants, and technical consultants who will be hired in accordance with Bank procurement procedures. The project is not expected to require land acquisition or access restrictions on private lands as all activities will take place on public lands.

28. The SEA/SH risk rating is low, particularly in light of the comprehensive national regulatory framework. This assessment will be revisited as part of the subproject screening during implementation.

29. The Borrower has prepared a draft ESMF, Labor Management Plan (LMP) and Stakeholder Engagement Plan (SEP) (including a Grievance Mechanism – GM) as E&S instruments where the environmental and social risks and impacts of the project were assessed throughout the project life cycle so as to meet the requirements of the ESSs in a manner and within a time frame acceptable to the Bank.

E. Implementation

Institutional and Implementation Arrangements

30. **OGM will be the sole Implementing Agency of the project.** OGM is tasked with the protection and sustainable management of Türkiye's forest resources which are almost entirely (99.9%) owned by the State. It operates through its 21 Departments located in its headquarters in Ankara, 12 Research Institute Directorates, and 28 Regional Directorates of Forestry which oversee 243 Forest Operational Directorates and thousands of Field Offices spread across the country, with a total of approximately 40,000 staff. The OGM is responsible for dealing with and combating wildfires in the country and has a dedicated Department for Combatting Forest Fires with advanced technological capacities and has recently (after the 2021 forest fires) established an Aviation Department. Regulatory certainty regarding forest fire management



is also strong. Analysis finds⁴⁷ that the legislative systems are over 78% in line with related best practice issued by FAO as per forestry legislation.⁴⁸ OGM has gained experience in World Bank policies and procedures as the lead Implementing Agency of the Türkiye Resilient Landscape Integration Project (TULIP, P172562) which became effective in 2021, and previously through the Anatolia and Eastern Anatolia Watershed Projects and has also experience in working with other development partners.

31. OGM has established adequate institutional arrangements for project implementation. OGM has established a Project Implementation Unit (PIU) in its Headquarters in Ankara, headed by a Project Coordinator working under the guidance of the Deputy General Director who will act as the Project Director. The OGM PIU will be responsible for day-to-day management and implementation of the Project, including the responsibility for financial management, procurement, disbursements, environmental and social risk management, and monitoring, evaluation and reporting of Project activities. The existing PIU has qualified staff responsible for management of core project management functions, and additional individual consultants will be hired by OGM to support specific functions as needed, including fiduciary, environment and social aspects to ensure efficient and effective project implementation. OGM staff have recently received intensive training sessions on WB fiduciary and ESF implementation aspects under the TULIP project which will also benefit the proposed project's PIU. OGM has also established a Technical Working Group consisting of the key Departments that will participate in the project during implementation, under the guidance of the Subproject Coordination Board. A Project Steering Committee composed of higher-level officials has also been established to monitor progress and provide overall guidance during project implementation.

32. Project Operations Manual (POM) and Grants and Microcredits Manual. OGM will develop by project effectiveness a POM for purposes of project implementation setting out: (i) policies and procedures related to the implementation of project components and subprojects; (ii) financial management and procurement arrangements and procedures; and (ii) environmental and social management procedures in accordance with the ESCP. In addition, OGM will develop a Grants and Microcredits Manual for the implementation of livelihood support activities building on the experience under the TULIP project.

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⁴⁷ Elvan, O.D., Birben, Ü., Özkan, U.Y. *et al.* Forest fire and law: an analysis of Turkish forest fire legislation based on Food and Agriculture Organization criteria. *fire ecol* 17, 12 (2021).

⁴⁸ Article 169 of the Turkish Constitution of 1982; Forest Law No. 6831; Regulations for the Duties of Officials Assigned with the Prevention and Extinguishing of Forest Fires; Regulation Regarding Compensation Payable to Those Injured and Killed During Forest Fire Fighting; and Notification No. 285 issued by the General Directorate of Forestry

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