



The World Bank

Land administration infrastructure for green and sustainable development (P179217)

Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 04-Apr-2023 | Report No: PIDA35235

**BASIC INFORMATION****A. Basic Project Data**

Country Turkiye	Project ID P179217	Project Name Land administration infrastructure for green and sustainable development	Parent Project ID (if any)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date 27-Mar-2023	Estimated Board Date 18-May-2023	Practice Area (Lead) Urban, Resilience and Land
Financing Instrument Investment Project Financing	Borrower(s) Republic of Turkiye, Ministry of Treasury and Finance	Implementing Agency General Directorate for Land Registry and Cadastre (TKGM)	

Proposed Development Objective(s)

To improve the accuracy and accessibility of land administration information in Turkiye.

Components

Component A: Creating 3D City Models and Updating Cadastre Data

Component B: Real Estate Valuation

Component C: Institutional Capacity Building and Project Management

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	84.78
Total Financing	84.78
of which IBRD/IDA	84.78
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	84.78
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Environmental and Social Risk Classification

Moderate

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

N/A

B. Introduction and Context

Country Context

1. Türkiye enjoyed high growth rates between 2002-17 that supported poverty reduction, but shocks that began in late 2017 and early 2018 continue to cause risks to the economic and social gains made since the early 2000s. Türkiye achieved rapid economic and social development in the 2000s, with poverty incidence more than halving and real Gross Domestic Product (GDP) increasing by 50 percent by 2008. Since the Global Financial Crisis, rapid growth continued but was increasingly associated with stagnant productivity, a rising current account deficit and growing foreign exchange-denominated debt stock. Policies to stimulate the economy after the failed coup led to economic overheating in 2017, double-digit inflation, and a large current account deficit. The cumulative effects of these and other economic vulnerabilities came to a head in mid-2018, with the tightening of global economic conditions combined with challenges in international relations. These events triggered a significant depreciation of the Turkish lira and turmoil in the Turkish economy. Spending fell, inflation accelerated, and the corporate sector's debt increased. Türkiye experienced three quarters of negative growth from late 2018 to mid-2019, coupled with sizable job losses. Poverty reduction progress stalled in 2018.

2. An emergent economic recovery starting late 2019 was undermined by the COVID-19 pandemic, but the swift policy response led to a sharp rebound in the economy. Over the course of late 2018 and 2019, the country's economy went through significant adjustments. By the end of 2019, economic activity was rebounding with strong growth in the fourth quarter but was disrupted by the onset of the COVID-19 pandemic in early 2020. The government responded swiftly to COVID-19 with a large economic stimulus program, which generated a significant increase in economic activity in late 2020 that more than offset the decline recorded earlier in the year. However, the policy frameworks that ensured a strong economic rebound during the pandemic also heightened macroeconomic risks, including rising inflation, currency depreciation, corporate and banking sector vulnerabilities and decline in reserve buffers. The economy grew at 11.4 percent in 2021 and remained among the best G20 growth performers in 2022 despite growth slowing to 5.6 percent as exports, investment and manufacturing activity lost momentum in the second half of the year. The country's vulnerability has been exacerbated by the two devastating earthquakes that struck the southern provinces of Türkiye on February 6, 2023, which have reportedly caused the collapse or extensive damage to tens of thousands of buildings, including housing, public buildings and historical structures, and to critical infrastructure in the region. The impact on macro-financial conditions is still unfolding, with implications for growth, labor markets and poverty, the financial sector, and fiscal and external balances.

3. The country has an opportunity to move rapidly to a more resilient, green, and inclusive growth path as its economy recovers from COVID-19 and the recent earthquakes. The pandemic has generated a profound awareness of the



links between human health, climate change, fragile ecosystems, and economic growth. Similarly, the February 2023 earthquakes and Türkiye's vulnerability to climate change events have reiterated the importance of resilient systems, including those related to appropriately recorded and regulated buildings and property, to ensure a speedy response to disaster. As pressures intensify to support post-pandemic and post-earthquake economic recovery, growth, and jobs, Türkiye has an opportunity to build back better, prioritizing strategies that can reduce its vulnerability to disasters and climate change, avoid the depletion of its natural resources and improve social inclusion. However, this transition to a more resilient, climate-proof, and inclusive future will require significant investments and integrated planning and systems at all levels of government.

4. The Government of Türkiye has made ambitious climate change commitments, such as ratifying the Paris Agreement in October 2021 and committing to net zero emissions by 2053. Vast tracts of land will be needed for the climate actions the country has committed to, including for forest preservation and renewable energy. Simultaneously, large amounts of lands will undergo inundation, degradation or desertification making them unsuitable for cultivation or habitation due to climate change. When combined with rapid urbanization, an unprecedented demand for land is expected in the coming decades. Comprehensive land information, valuation and administration are seen to improve management of, and access to, land, critical for renewable energy plans and afforestation. Better management of public lands will help with demands for land, and together with land regularization/registration and reduction in uncontrolled land use conversion enable cities to grow greener. Within cities, moving to low-carbon pathways will require more compact urban growth through management of urban expansion and better use of existing and under-utilized land within cities through infill development and urban regeneration, which also requires sound land administration and management systems to be in place.

5. Enhanced and integrated land administration, management and valuation systems provide the foundational data and information needed to improve forward-looking spatial planning, better guide resilience, disaster management and recovery planning, and facilitate response to climate change and the disaster events predicted to result from this. In Türkiye, rapid urbanization left a legacy of informal/illegal urban development and pressures on infrastructure and a countryside with problems of land resources under pressure from climatic factors and depopulation. In addition, observed and anticipated climate change impacts, such as more intense precipitation, drought, extreme heat, flooding, and rising sea levels, are expected to increase the frequency and severity of disaster events and put pressure on energy consumption, especially in urban areas. These challenges require integrated land management systems based on accurate cadastral and property information to identify vulnerabilities and the people and activities most at risk, and the location of utilities and infrastructure, to plan for, mitigate and respond to natural hazard events and the consequences of climate change, and to improve the economy. Investment is needed to fill the gap in cadastral and land registry information, as well as to improve the accuracy and quality of the existing information so that georeferenced data needed for disaster planning and mitigation, resilient urban development, and green and sustainable economic growth are made available. Improved property valuation systems are needed to enhance tax revenue capabilities, identify the principal beneficiaries of infrastructure investment, determine the cost-effectiveness of disaster planning and mitigation and urban resilience policies, and kick-start the development of a catastrophe and disaster insurance and recovery industry for businesses and households.

Sectoral and Institutional Context

6. During the past two decades, Türkiye has taken huge strides towards the development of a modern cadastre system. The improvement of Turkey's cadastre began with the Bank-financed Marmara Earthquake Emergency Recovery Project (P068368, completed in December 2006), which sought to upgrade the cadastre in the disaster-affected areas by updating and improving obsolete registers and maps. Significant progress has been made in upgrading cadastral



information¹ through a program of cadastral renovation and digitization (in particular with support of the ongoing Land Registration and Cadastre Modernization Project, LRCMP, P106284), with updating in digital format of about 13 million parcels out of the 24 million estimated parcels countrywide. About 36 million people (approximately a third of the Turkish population, 40 percent of which are female) have benefited from the improved accuracy and more efficient land services, and hundreds of institutions from access to improved cadastral data. Approximately 11 million parcels remain to be updated, requiring a further round of improvements to achieve the target of a fully renovated digital cadastre in Türkiye.

7. Türkiye has adopted international best practice by having a combined land registry and cadastre in the form of the Directorate General of Land Registry and Cadastre (*Tapu ve Kadastro Genel Müdürlüğü*, TKGM²) rather than having these in the hands of different institutions. TKGM is also responsible for mapping, and the recently created Department of Real Estate Valuation enables valuation activities to be coordinated with land registration and cadastre. Türkiye has also adopted international best practice in having TKGM funded through service fees charged to users. Being dependent on user fees means recognition of the need to satisfy its clients, to bring in innovations that enhance their experience and meet their needs, and to keep abreast of international developments. TKGM has successfully brought in private surveying firms to undertake much of this work. That resulted in the creation of a flourishing private sector in this area, which had previously not existed.

8. The investments in cadastre modernization have set the stage for the next generation interventions in the sector that will use innovative approaches and state-of-the-art technologies to further improve the land administration system. As traditional surveying technologies have been replaced by electronic and remote sensing methods, this has opened up opportunities for collecting and exploiting data that were previously not attainable. The new technologies (such as three-dimensional (3D) city models) have made it possible to tackle weaknesses in the land registry in Türkiye and, therefore, to make it a comprehensive and up-to-date source of information on the activities within cadastral parcels. Such an approach creates possibilities that were previously unattainable, for example, in property valuation³. Digital technology enables cities to be built with networks of communications and sensors, but if these are to be utilized to achieve better urban management, geospatial data is needed that can provide insights and alerts. Applications of geospatial data now exist that were unthought of when the foundation cadastre was being created and go far beyond the initial goal of providing citizens with secure land rights.

9. The rapid urban expansion that Türkiye experienced in the past seven decades led to the construction of informal housing and buildings. While the country made considerable progress in enabling external users to access cadastre and land registry data, the existing scale of informal development has resulted in significant discrepancies between the information recorded in the property registry and reality on the ground as the majority of the informal housing and buildings are unregistered. Without an accurate registry and spatial information, the appropriate spatial planning to make urban areas more resilient in the face of hazard events and climate change and disaster planning and recovery is extremely challenging. Businesses and households face major obstacles when trying to discover whether buildings they plan to invest in fully comply with the regulations. The banking sector is put at risk of collateral proving to be inadequate because of inadequate information and is compelled to protect itself by taking an excessive risk-adverse approach to asset-backed lending and mortgages. The task of ensuring that new buildings comply with zoning plans and construction codes is made very difficult.

10. In its 2021 Amasya pilot study, TKGM carried out the first systematic assessment of the gap between what is

¹ Information pertaining to parcels' identification, location, shape and boundaries, size, area, improvements, and ownership.

² TKGM operates both the cadastre and land registry and is also responsible for mapping and the production of aerial photos (orthophotos) and the development of mass appraisal. TKGM is mostly financed by fees paid by users rather than a budget from the Government. The fee income generates significant surplus revenue for the Government of Türkiye of which TKGM is permitted to retain a proportion as a revolving fund with which to finance innovation and improvements.

³ As an example, see Ying, Y., Koeva, M., Kuffer, M., and Zevenbergen, J. (2022), "Toward 3D Property Valuation—A Review of Urban 3D Modelling Methods for Digital Twin Creation", *ISPRS International Journal of Geo-Information*, volume 12, no. 2, 35pp., <https://doi.org/10.3390/ijgi1201002>.



recorded in the land registry and reality on the ground, using state-of-the-art approaches. It found that that 70 percent of the privately owned buildings and 88 percent of public buildings are unregistered, and 46 percent of the unregistered private buildings have been built in violation of zoning plans. The implication is that, unless the unregistered buildings (and their property units) are identified and recorded, there is no reliable information about what is located where, and, therefore, in the event of a disaster, what households, businesses, or the delivery of public services will be affected and the scale of the impact.⁴ A private buildings and contents insurance market able to provide compensation to those affected by disaster events, such as is found in seismically active countries like New Zealand, is unlikely to develop in Türkiye as commercial insurance companies do not have access to the information they require to assess risks and determine premiums. The proposed Land Administration Infrastructure for Green and Sustainable Development Project aims to significantly minimize this informational gap through the development of an accurate buildings inventory (through the creation of 3D city models), including locations, building units, activities, infrastructure, and population⁵.

11. A fundamental problem to be resolved is how to close the data gap between TKGM's cadastral system (MEGSIS), which manages parcels (parcel boundaries and other relevant attributes), and the Ministry of the Interior's system (MAKS), which manages and provides addresses. The two systems for recording spatial information about buildings are not integrated. The cadastre parcels are stored and managed as geospatial objects (i.e., have a geometry in the Turkish national Spatial Reference System), but there is uncertainty about the number of individual property units that are to be found on parcels, something the MAKS system could answer if integrated with the cadastre. The Amasya pilot study has demonstrated the feasibility of integrating these two systems, and the proposed Project will support the roll out of such integration across all urbanized city and district centers in the country.

12. The income that the Government of Türkiye can earn from registration fees is significantly reduced by evasion by owners of unregistered properties, and municipalities' revenue from the annual property tax is compromised by the poor quality of valuations. Additional property tax income will potentially result from untaxed properties being discovered in the 3D city modelling. Türkiye raises significantly less as percentage of GDP from property taxes (typically the main local tax revenue) than the Organization for Economic Cooperation and Development (OECD) average⁶. Inaccurate assessments that do not reflect market values have serious implications for unfairness and equity between taxpayers. As the rate of urbanization slows, the ability to fund infrastructure investment and the delivery of local services from sales of development land will inevitably decline. Investments to identify and register unregistered buildings supported by the project are a key first step towards having a solid financial basis for urban transformation and fair and equitable property taxation. The next step is to develop accurate market-based assessments which can open up the potential for central and local governments to make use of property taxes and land value capture tools to help fund essential infrastructure and urban regeneration and transformation. Other applications of accurate market-based assessments include more transparent and efficient property markets, more reliable mortgage valuations and greater security of the banking system, the development of catastrophe insurance, and the use of valuations for a variety of public purposes (such as determining social security entitlements and inheritance and capital gains taxes).

13. TKGM has been working closely with the Geographic Information Systems (GIS) Directorate of the Ministry of Environment, Urbanization and Climate Change on the development of a National Spatial Data Infrastructure (NSDI) for Türkiye. This has included work on data standards and the governance of the NSDI. In this regard, the Project will support the ongoing cooperation between TKGM and the GIS Directorate of the Ministry of Environment, Urbanization and Climate Change (MEUCC, responsible for NSDI) for the strengthening of this infrastructure and the sharing of key data sets with

⁴ For instance, Pacific Risk Information System contains detailed, country-specific information on assets, population, hazards, and risks for 15 Pacific Island countries, with hazard specific risk maps showing the geographic distribution of potential losses for each country, which can be accessed through an open-source web-based platform.

⁵ It should be noted that the provision of commercial fire insurance for cities in USA, which were largely comprised at that time of wooden buildings, was stimulated by the production of maps showing the location of each building and its construction type, which was accessible by insurance companies.

⁶ Türkiye has a recurrent property tax system that raises 0.2 percent of GDP compared with an OECD average of 1.1 percent.



other government agencies.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

14. To improve the accuracy and accessibility of land administration information in Türkiye.

Key Results

15. Progress towards the achievement of the PDO will be monitored through the following PDO-level indicators, as well as a series of intermediate indicators:

- Country area covered by updated, modernized digital cadastre (percentage)
- Urban areas with updated buildings inventory⁷ (km²)
- Institutions with access to the new spatial data⁸ (Number)
- Web services needed to achieve interoperability of 3D city model information system with NSDI system implemented (Number)
- Quarterly reports of property market trends published on the Property Value Information Center's website (Yes/No)

D. Project Description

16. The project builds on previous World Bank-financed projects' achievements⁹ and aims to bring Türkiye in line with best international practice in land administration and related systems. It will support the completion of the digitization and update of Türkiye's cadastre. The project will further tackle the problem of the gap between what is recorded in the land registry and reality on the ground, by scaling up the Amasya province pilot activities and develop an accurate buildings inventory (through 3D City Models). Furthermore, the project will support TKGM in its mandate to develop mass appraisal systems of property valuation, which will enable Türkiye to increase the yield from property taxes and relieve fiscal pressure on local and national governments. It should also make a major contribution to the development of a transparent and efficient property market by making market data widely available to market participants.

17. The Project will include four components:

18. **Component A: Creating 3D City Models and Updating Cadastre Data.** This component will support: (i) the creation of 3D city models based on the proven approach tested in the Amasya pilot; and (ii) the completion of the update and verification of cadastral data for 6 million parcels (out of the remaining 11 million parcels¹⁰ not covered by LRCMP), in both urban and rural areas. As part of the cadastre updating activities, capacity building programs for addressing challenges concerning women's land rights and ownership disparities will be discussed with TKGM to determine how to better address these issues as part of the public consultation step during the surveying process. While activities on update and verification of cadastral data will be carried out in both urban and rural areas, for creation of 3D city models, the

⁷ These will be the urban areas for which 3D city models will be created under the project.

⁸ These will include in particular: municipalities in the project area, the Ministry of Environment, Urbanization and Climate Change, and the Disaster and Emergency Management Authority, AFAD.

⁹ The first Bank-funded operation targeting the land sector in Türkiye was the 1999 Marmara Earthquake Emergency Recovery Project, which sought to upgrade the cadastre in the disaster-affected areas by updating and improving the registers and maps. The project pioneered the outsourcing of cadastre work to the private sector, an approach that significantly accelerated the pace of cadastre completion during the 2001 Agricultural Reform Implementation Project, which was the second Bank-financed operation. Subsequently, the Government's decision to increase funding for cadastre modernization played an important role toward the efficiency enhancement in overall land administration, leading to the third Bank-financed operation, the 2008 Land Registry and Cadastre Modernization Project and its Additional Financing portion. As a result of the series of interventions, there have been visible and significant improvements in access by individual and institutional users to digital cadastral data, improvements in IT systems, and pilot studies of mass valuation and 3D city models.

¹⁰ There other 5 million parcels will be undertaken simultaneously by TKGM using Government resources.



Project will cover major urban areas (approximately 40,000 km², almost all urban areas in the country) in all 81 provinces in Türkiye. As part of these activities, the Project will finance the completion and renewal of the aerial surveys, the buildings inventory, 3D city modelling, the integration of the data from the MEGSIS and MAKs systems in the 3D city model information system, which has been developed by TKGM and is being tested, and the implementation of web services to achieve interoperability of the 3D city model information system with the NSDI system. The Project will further support considerations of the policy options for addressing the irregularities in Türkiye's cadastre that are expected to emerge from the creation of 3D city models.

19. **Component B: Real Estate Valuation.** Based on the experience gain through previous mass valuation pilot projects in Fatih and Mamak carried out under LRCMP, as well as the Amasya pilot, the Project will support the development of proofs of concept to facilitate the establishment of a mass valuation system in Türkiye and generate the market values of individual property units. This support will focus on the collection of the required price information and data on the sample of properties needed for mass valuation modelling in the form of a Sales Price Register, the establishment of a Property Value Information Center for the storage, management, exchange and distribution of relevant valuation data for each of the principal valuation methods, including the Sales Price Register, leases, rentals, and building costs, and investment in hardware and software upgrading. The valuations can be used for a variety of purposes (property taxation, improving disaster risk financing and insurance in the event of climate-related natural hazards, and updating the value of collateral) and form one of the key datasets in an NSDI. The Project will demonstrate proof of concept and what will be required to roll out the system across the country as a whole and be representative of the main types of property. The rolling out of mass valuation models to the population of properties will require the use of 3D city models to identify buildings and taxable units and their characteristics. The municipal authorities will be an important source of key data on individual properties to be entered in the Sales Price Register, including zoning plans, zoning restrictions, and architectural design drawings. Capacity building activities will be included to ensure that municipalities can provide reliable data in the format needed (digitized/vectorized) to be shared/uploaded into TKGM system and other systems as necessary.

20. **Component C: Institutional Capacity Building and Project Management.** This Component will support capacity building and training of TKGM staff and other key stakeholders that are producers and/or users of spatial data (e.g., municipalities, the Population and Citizenship Affairs Directorate General of the Ministry of Interior, and others as relevant), including in the use of the new 3D city model tool. The Component will further finance IT infrastructure necessary for the scaling of the "3D City Model Information System" developed by TKGM, and support the enhancement of the existing Project Implementation Unit (PIU) and of TKGM's automated Monitoring & Evaluation (M&E) system. TKGM already has a strong supervision and inspection function, but the additional work under this project requires enhancement of TKGM's capacity. Additionally, the Component will cover costs associated with public awareness and dissemination events related to the benefits of project activities, including stakeholder consultations, throughout implementation, as well as targeted capacity building programs for customer-oriented service provision.¹¹

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

¹¹ As noted in the Citizen Engagement section, TKGM has a Quality and Customer Department with the responsibility for responding to citizen feedback and queries it receives. The target capacity building programs will be designed in close consultation with this department in order to identify and fill any gaps TKGM has with responding to citizen feedback.



Summary of Assessment of Environmental and Social Risks and Impacts

21. The environmental risk is rated as Low. The Project will mostly include desk-based studies such as mass valuation modeling, collection of required data for mass valuation system, extracting and analyzing property value data, determining their values and presenting value maps, modernizing Real Estate Cadastre and Registration services. The Project will not support any civil works. The geodesic studies under the scope of the Project include surveys and measurements as field activities by use of theodolite, total station, and other tools. The environmental and OHS risks of the geodesic-related field activities are easily mitigable in the context of the national environmental and OHS legal framework. Therefore, the potential adverse environmental risks and impacts are likely to be minimal or negligible.

22. The social risk rating for the Project is classified as Moderate. The Project activities do not involve acquisition of land or any change to existing property rights. Since there will be no civil works within the scope of the Project, the potential risks to community health and safety, livelihoods, labor rights and working conditions, or cultural heritage are therefore limited. The social risks are related to any unresolved disputes that may exist between landowners leading to potential conflicts and non-inclusion of vulnerable groups in the cadastre update processes and other project activities. TKGM has a well-functioning objection mechanism that allows landowners to object to the results of cadastre update studies performed on their lands and also has a notification procedure as per the national legislation that includes informing the landowners and *Mukhtars* at the beginning of the cadastre update process with announcements to be made 15 days prior and informative meetings in the affected settlements to be held prior to the site study. For the resolution of existing disputes on land borders, TKGM makes efforts to find any evidence on past records and documents and consult with witnesses. Most of the disputes are resolved this way based on the experienced from the RCMP, though a few cases result in the complainant going to court for resolution. Potential risks in the urban context with occupying buildings/units found to be irregular/illegal as part of the building inventory studies are assessed. TKGM will not carry out any formal registration of informal properties but will record them in their system, which will allow the Government to obtain an understanding of the type of irregularities and illegalities found on the ground. TKGM will not identify the formal/informal users of the buildings, only the building features on the lands will be identified and recorded. The data will only serve the Government to help develop new regulations/policies that remain to be defined and will not be known in the short or medium term.

23. The Project is anticipated to result in a wide range of benefits being introduced to the public at large. Some of the advantages of the cadastre renewal process include: (i) indisputable parcel boundaries and resolution of any issue with neighbors; (ii) buying, selling, and renting on indisputable sizes; (iii) no need to pay private experts to measure the parcels in case of any transaction regarding land (selling, buying, renting, providing as collateral, using for attachment proceedings, etc.); and (iv) improved accuracy in paying service providers for agricultural operations (tractor and combine operators). A land market with increased transparency is expected to be more functional and preferable to all stakeholders (investors, property owners, government, legal authorities, and financial institutions).

24. TKGM has prepared a Stakeholder Engagement Plan (SEP), which outlines the general principles and strategy to identify key stakeholders and plans for an engagement process per ESS10, and presents modalities of engagement that are tailored to the needs and characteristics of each stakeholder group defined under each Project component. TKGM will disclose the draft SEP and will hold consultations on the SEP before negotiations completion. TKGM will disclose an updated SEP that includes a summary of consultations. The existing grievance redress mechanism of TKGM will be utilized for project purposes as well as national-level grievance mechanisms such as CIMER and the Ministry-level call center, as defined in the SEP. TKGM will assign/hire an E&S expert in the PIU who will be responsible for the implementation of project activities in line with World Bank Environmental and Social Standards and the E&S instruments prepared for the project (Environmental and Social Commitment Plan (ESCP) and SEP). The E&S expert will also be responsible for managing



project-level grievances, recording and reporting the functioning of the grievance redress mechanism to the World Bank.

25. Environmental and Social Standards Relevant to the Project. ESS1: Assessment and Management of Environmental and Social Risks and Impacts; ESS2: Labor and Working Conditions; and ESS10: Stakeholder Engagement and Information Disclosure are relevant to the project. Türkiye does not have any recognized indigenous or traditional underserved local communities, and the project is not going to apply financial intermediary bodies. Furthermore, the proposed project does not trigger (i) the World Bank Operational Policy 7.60 on Disputed Territories, as it will not be implemented in such areas; or (ii) Operational Policy 7.50 on International Waterways, as the proposed activities will not generate any impacts on such waterways.

E. Implementation

Institutional and Implementation Arrangements

26. The main institution responsible for implementing the project will be TKGM. Its existing Project Implementation Unit (PIU) for LRCMP, which has demonstrated strong performance in overall project management and implementation, will be maintained and will have responsibility for the project's fiduciary, safeguards and M&E aspects. The PIU will be strengthened as needed in light of the expansion of activities under the proposed project. Technical responsibility for the implementation of project activities will lie with TKGM's various departments, including the Department of Cadastre, Department of Land Registry, Department of Mapping, Department of Real Estate Valuation, and Department of Information Technologies. The Heads of these various departments will be part of a Project Coordination Committee that will work with the Regional Project Managers and the PIU's Project Officer to ensure proper coordination among the various departments within TKGM at both the central and regional levels throughout project activity implementation.

27. Partnerships between TKGM and key stakeholders will also be critical for ensuring successful implementation of the Project activities. These include partnerships with government agencies such as the Ministry of Interior's General Directorate of Population and Citizen given its management of the spatial address registry system (MAKS system), which contains data on buildings and building units for TKGM to develop 3D city models. Similarly, at the local level, municipalities and, to a certain extent, Special Provincial Administrations¹² will play a key role in providing much of the data required by TKGM (architectural plans of existing buildings, zoning plans, building permits). The Directorate General of GIS of the Ministry of Environment, Urbanization and Climate Change, which is responsible for overseeing the NSDI in Türkiye, will also be a key stakeholder and recipient of the data produced under the project. There is well-established, ongoing cooperation between TKGM and these stakeholders, especially following the Amasya pilot activities and TKGM's piloting of various improved systems for information sharing at both the central and local level. A comprehensive protocol agreement between TKGM and the Directorate General of GIS and between TKGM and the Ministry of Interior is already in place that covers data sharing requirements between the MEGSIS and the NSDI platform, and MEGSIS and MAKS systems, respectively. Similarly, protocols for data sharing have been signed between TKGM and municipalities, which will be expanded to cover specific activities and data sharing to be supported by the project.

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¹² Special Provincial Administrations are local representatives of all central government institutions responsible for delivering services in rural areas (including building permits). It is expected that about 5 percent of data integration will involve these administrations.



Senior Land Administration Specialist

Ahmet Kindap

Senior Urban Specialist

Borrower/Client/Recipient

Ministry of Treasury and Finance

Republic of Türkiye

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Practice Manager/Manager:		
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