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ASIAN INFRASTRUCTURE INVESTMENT BANK

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Project Document
of the Asian Infrastructure Investment Bank

Sovereign-backed Financing

Republic of Turkey
Istanbul Seismic Risk Mitigation and Emergency Preparedness Project

Currency Equivalents
(As at December 12, 2019)

Currency Unit – Name (currency code, TRY)
TRY1.00 = USD 0.17
USD1.00 = TRY 5.83

Borrower's Fiscal year
January 1 – December 31

Abbreviations

AFAD	Istanbul Provincial Directorate of Disaster and Emergency
AIIB	Asian Infrastructure Investment Bank
CEB	Council of European Development Bank
EIB	European Investment Bank
EMP	Environmental Management Plan
ERR	Economic rate of Return
ESS	Environmental and Social Standard
FY	Fiscal Year
GoT	Government of Turkey
GRM	Grievance Redress Mechanism
IEG	Independent Evaluation Group (World Bank)
IFI	International Financial Institution
IOCT	International Open Competitive Tendering
IPCU	Istanbul Project Coordination UnitIslamic Development Bank
IsDB	Islamic Development Bank
ISMEP	Istanbul Seismic Risk Mitigation and Emergency Preparedness Project
JICA	Japan International Cooperation Agency
KfW	KfW Development Bank (Germany)
MDB	Multilateral Development Bank
NCT	National Competitive Tendering
O&M	Operations and Maintenance
PDS	Project Delivery Strategy
PP	Procurement Plan
PPP	Policy on the Prohibited Practices
PPM	Project-affected People's Mechanism
STC	Short-Term ConsultantTurkish Lira
TRY	Turkish Lira

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1. Summary Sheet

Republic of Turkey

Istanbul Seismic Risk Mitigation and Emergency Preparedness Project

Project No.	Project ID:000319
Borrower	Republic of Turkey
Project Implementation Entity	Istanbul Project Coordination Unit (IPCU), under the Istanbul Governorship
Sector Subsector	Urban Urban Infrastructure
Project Objective	The objectives of the project are to improve the disaster resilience of critical public facilities and to enhance emergency preparedness of the City of Istanbul.
Project Description	Building on the highly successful project initiated by the World Bank and supported by many IFIs, the proposed project will finance structural retrofitting and reconstruction of priority public buildings such as schools, hospitals, and other social facilities. Fulfilling a crucial function as emergency shelters, emergency equipment such as power generators and water storage tanks will also be supplied to the facilities covered under the project to enhance emergency preparedness. In addition, energy efficiency and water conservation measures of targeted buildings will be enhanced, where possible, while universal design features for people with disabilities will be implemented. The proposed project will also finance feasibility studies/designs and construction supervision to ensure compliance with the latest building codes and technical guidance developed under the World Bank-financed project. Finally, the project will support institutional capacity building, public awareness, training and project management to a limited extent.
Implementation Period	Start Date: March 1, 2020 End Date: June 30, 2025
Expected Loan Closing Date	December 31, 2025
Cost and Financing Plan	Total Estimated Project cost: USD300 million Financing Plan: AIIB: USD 300 million
Size and Terms of AIIB Loan	USD 300 million. AIIB's standard interest rate for sovereign-backed loans with FSL.
Financing for overall ISMEP program	EIB: Euro 600 million (2008-2021) KfW: Euro 250 million (2016-2021)

	IsDB: Euro 247.9 million (2012-2020) Other IFIs' loans (World Bank and Council of European Development Bank) have been closed or will be closed by the end of 2019.
Environmental and Social Category	B
Risk (Low/Medium/High)	Low
Conditions for Effectiveness	Legal Opinion
Key Covenants/Conditions for Disbursement	Implementation of Environmental and Social requirements.
Policy Assurance	The Vice President, Policy and Strategy, confirms an overall assurance that AIIB is in compliance with the policies applicable to the project.

President	Jin Liqun
Vice President, CIO	D.J. Pandian
Director General, IO-2	Yee Ean Pang
Manager	Rajat Misra
Team Leader	Toshiaki Keicho, Sr. Investment Operations Specialist-Urban
Team Members	Michaela Bergman, Principal Social Development Specialist Henri Boullier de Branche, Sr. Environmental Specialist Courtney R. Lowrance, Principal Environment Specialist Yunlong Liu, Procurement Specialist Yi Geng, Sr. Financial Management Specialist Jessana A. Yanuario, Finance Officer Irem Kizilca, Young Professional Gregor Herda, Young Professional Xiao Zhang, Administrative Assistant Tatsuo Narafu, Consultant Engineer

2. The Project Description

A. Rationale

1. **Country Priority.** Turkey is highly vulnerable to natural disasters, particularly earthquakes. There have been 76 earthquakes in Turkey since 1900, resulting in approximately 90,000 fatalities and direct losses of approximately USD25 billion. About half the deaths were due to two earthquakes on the North Anatolian Fault in 1939 and 1999. In the devastating Marmara earthquake of 1999 (its epicenter was 75 km from Istanbul), the death toll reached over 17,000 with a direct economic impact estimated at USD5 billion, or 2.5 percent of Turkey's GNP at the time. Modeling conducted after this earthquake showed a 50 to 74 percent probability of an earthquake in the Marmara Sea near Istanbul exceeding a moment magnitude (Mw) of 7.0 in the next 30 years[1]. This level of seismic hazard is shared by Tokyo and San Francisco; however, the fragility of the building stock constructed prior to the 1998 revision of the Turkish building code is much higher than that of Tokyo or San Francisco.

2. A major earthquake in Istanbul would be catastrophic and could risk derailing the country's development trajectory. It is the center of economic activity in the country, constitutes the largest population center, and contributes 28 percent of national GDP, 38 percent of national industrial output, and 44 percent of tax income[2]. Istanbul therefore assumes highest priority for earthquake risk reduction in Turkey.

3. The existing stock of buildings in Istanbul had mostly been constructed prior to the introduction of the 1998 building codes, which were the first to specifically address earthquake disaster prevention and to require modern construction practices. It is estimated that the metropolitan area's building stock of approximately 1.5 million structures includes about 12,000 public buildings, out of which about 3,600 were identified as those in need of structural strengthening, following the Marmara earthquake in 1999.

4. **Institutional Context.** After the Marmara earthquake, the Government of Turkey (GoT) enhanced its efforts to develop and implement a comprehensive hazard risk management strategy for the country. At the local level in Istanbul, both the municipality and the provincial governorship demonstrated commitment to seismic risk mitigation and implemented risk assessment and planning activities leading to the Earthquake Master Plan for Istanbul. This has been internationally recognized as a strategic instrument for addressing seismic risk in a highly vulnerable mega-city. In addition, the GoT invested in the revision and updating of the building code in 2000 and 2007.

5. The World Bank initiated and supported the Istanbul Seismic Risk Mitigation and Emergency Preparedness (ISMEP) Project between 2005 and 2015 (a total of USD550 million), which focused on retrofitting and reconstructing priority public buildings such as government's

[1] Japan International Cooperation Agency (JICA), December 2002
[2] World Bank: Implementation Completion and Results Report for Istanbul Seismic Risk Reduction and Emergency Preparedness Project, June 2016

administrative buildings, schools, hospitals and other social facilities. ISMEP is regarded as highly successful and has attracted financing from other International Financial Institutions (IFIs) such as the European Investment Bank (EIB), Council of European Development Bank (CEB), Islamic Development Bank (IsDB), and KfW Development Bank (KfW) (see Table 1) to support the ISMEP program. So far, a total of 1,365 public buildings have been retrofitted or reconstructed under the overall ISMEP program. While much has been achieved, the unmet needs remain significant.

Table 1: Financiers of ISMEP

Financier	Loan Amount (Million Euro)	Implementation Period
World Bank	419.8	2005-2015
EIB	600.0	2008-2021
CEB	500.0	2010-2019
IsDB	247.9	2012-2020
KfW	250.0	2016-2021
Total	2,017.7	-

*Source: IPCU

6. **Lessons Learned.** Key lessons learned from the ISMEP program, which have been incorporated into the proposed project, are as follows:

7. **A sub-national multisector model can be highly effective for reducing disaster risk in a well-functioning major metropolitan area.** Under the World Bank-financed ISMEP project, the institutional and physical mapping of the project to the provincial government in Istanbul was a key driver of success. This allowed the IPCU, the implementing agency, to report only to the provincial Governor, which enabled efficient decision-making that was not subject to bureaucratic delays. Housing the IPCU outside of line ministries or direct beneficiaries contributed to stakeholder perceptions of impartiality and improved its ability to serve as a coordinating platform.

8. **A semi-autonomous professional project coordination unit can help to ensure effective and efficient project implementation.** IPCU was created outside of the government's normal budget procedures, and it attracted, developed, and retained significant technical expertise and project management experience. These helped it to deliver high quality outputs in a timely and cost-effective manner.

9. **Inclusion of functional upgrades (to modern service provision standards) makes disaster risk reduction investments for public facilities more effective and sustainable.** The ISMEP program has supported extensive coordination with the Provincial Directorates of Health and Education, as well as administrators of individual facilities, to ensure that the design and retrofitting plans (and the associated budget allocations) took into account service quality and required functionalities. This generated strong support for the primary investments in risk reduction, even though the works caused unavoidable disruption to the operation of the facilities.

10. **Early involvement of project beneficiaries and multiple stakeholders in the planning and execution of the retrofitting/reconstruction was crucial to successful project implementation.** School principals, teachers and parents were initially very apprehensive about vacating schools selected for retrofitting, which caused early delays. However, the transparency of the processes and engagement with the beneficiaries contributed to the positive results, through consultation with school principals and hospital directors throughout the facility selection, design and tendering processes. This allowed for arrangements to be in place well before the relocation of the students to host schools.

11. **Strategic fit for AIIB.** AIIB's Sustainable Cities Strategy (December 2018) outlines five aspirational attributes for cities to attain: Green, Resilient, Efficient, Accessible, and Thriving. The proposed project will meet at least two objectives by making Istanbul's critical public buildings greener and more resilient towards earthquakes. The Strategy also states further, “where health and education facilities are part of a more comprehensive/multi-sectoral integrated development that AIIB is considering to finance, AIIB will support the building of such facilities under this strategy as part of the broader integrated development.” The proposed project is part of a broad, multi-sectoral urban investment program aimed at increasing Istanbul’s resilience to seismic shocks and thus very much aligned with AIIB's Sustainable Cities Strategy.

12. **Value addition by AIIB.** AIIB’s financing will contribute to resource mobilization for making Istanbul more resilient and safer. It will help meet the urgent financing needs of strengthening critical public buildings against the earthquake risks in Istanbul. The project will replicate and expand the successful model supported by other IFIs**.** AIIB will help ensure that retrofitting and reconstruction works under the project will not only meet the national building code but also international standards for earthquake-resistance.

13. **Value addition to AIIB**. Joining international efforts to make Istanbul more resilient, which will save human lives and prevent damage to public assets, will enhance AIIB's institutional brand image. The project will also diversify AIIB's portfolio in Turkey as the first urban project in the country. Finally, it will lead to increased technical knowledge of staff in the field of disaster risk mitigation as well as green and resilient buildings.

B. Project Objective and Expected Results

14. **Project Objectives.** The objectives of the project are to improve the disaster resilience of critical public facilities and to enhance emergency preparedness of the City of Istanbul.

15. **Expected Results.** The project has significant potential benefits in terms of protecting human lives and public assets, reducing injuries, and increasing access to health services in the aftermath of a disaster. Indirectly, the project also contributes to sustaining crucial economic activities in the commercial and industrial center of Turkey, and consequently, making the country more resilient to crises caused by disasters.

16. **Expected Beneficiaries.** Most earthquake-related fatalities are due to building collapse or damage. Therefore, the main beneficiaries will be the occupants of the target public buildings (students and teachers at schools, patients and service providers at hospitals and clinics). The secondary beneficiaries will be ordinary citizens in Istanbul who can use strengthened schools as emergency shelters and have continuous access to medical services at safer hospitals even after a disaster. Public entities responsible for emergency preparedness and response in Istanbul will also benefit through capacity building activities.

C. Description and Components

17. **Overview.** Building on the successful project initiated by the World Bank and similar projects supported by many IFIs[3], the proposed project will finance structural retrofitting and reconstruction of priority public buildings such as schools, hospitals, and other social facilities. Fulfilling a crucial function as emergency shelters, emergency equipment such as power generators and water storage tanks will also be supplied to the facilities covered under the project to enhance emergency preparedness. Also, organizational capacities of Istanbul's Provincial Directorate of Disaster and Emergency (AFAD) and first responder agencies will be enhanced through procurement of various emergency equipment. In addition, energy efficiency and water conservation measures of targeted buildings will be enhanced, where possible, while universal design features for people with disabilities will be implemented.

18. The proposed project will also finance feasibility studies/designs and construction supervision to ensure compliance with the latest building codes and technical guidance developed under the World Bank-supported project. The project will support institutional capacity building, public awareness, and project management to a limited extent.

Project Components

Component A: Emergency Preparedness

19. This component aims to enhance the emergency preparedness of the City of Istanbul by strengthening the capacity of AFAD and other first responders. Specifically, the component will support: (i) provision of emergency equipment such as IT and emergency communications equipment, medical rescue and search and rescue equipment, and specialized emergency vehicles, etc.; (ii) public awareness and training; and (iii) any technical assistance to enhance emergency preparedness and responses.

Component B: Seismic Risk Mitigation for Public Facilities

20. This component is to reduce the risk of future earthquake damages to critical public facilities in order to save lives and ensure their continued functioning operation in the event of an

[3] The success of ISMEP Project is well documented in Project Performance Assessment Report of 2018, prepared by the World Bank's Independent Evaluation Group (IEG). IEG rated the outcome of the ISMEP Project as highly satisfactory. See https://ieg.worldbankgroup.org/sites/default/files/Data/reports/ppar_turkeyseismic.pdf

earthquake. The component will mainly consist of retrofitting and reconstruction of the existing priority public facilities such as schools, hospitals, and other social facilities (daycare centers, aged group homes for the elderly, and orphanages, etc.). The component will also support feasibility studies, detailed designs, and construction supervision. The project's implementing entity, IPCU, has already identified about 100 buildings to be included in the project based on the ISMEP program's established rules (see Annex 2).

Component C: Project Management Support

21. This component will support IPCU to implement the project in an efficient and transparent manner and continue to build the institutional capacity to sustain the implementation of the Seismic Risk Mitigation and Preparedness program beyond the life of the project. Specifically, the component will comprise IPCU's operational costs and project management support, including support to monitoring and evaluation, environmental and social safeguards, procurement and financial management aspects.

D. Cost and Financing Plan

Table 2: Project Cost and Financing Plan (USD million)

Component	Project Cost	AIIB's Financing (%)
Component A	10.0	10.0 (100%)
Component B	283.0	283.0 (100%)
Component C	7.0	7.0 (100%)
Grand Total	300.0	300.0 (100%)

E. Implementation Arrangements

22. The project will adopt the existing implementation arrangements established under the World Bank-financed ISMEP project and being used by the other IFIs in the ISMEP projects they are financing. The implementing agency is the IPCU established under the Istanbul Governorship.

23. **Implementation period.** The project's implementation period is from March 1, 2020 to June 30, 2025.The project will be implemented over two phases. IPCU has identified a total of 97 buildings for the proposed project. Phase 1 consists of 50 facilities for which building designs have been completed or will be completed by the end of December 2019. The designs for the remaining 47 facilities under Phase 2 are yet to be prepared, and the list of Phase 2 buildings will be finalized after the designs and cost estimates have been prepared.

24. **Implementation Management.** IPCU is headed by a highly qualified Project Director who reports directly to the Governor of Istanbul or his designee. Each relevant agency, such as the Provincial Directorates of Health, Education, Public Works, and others, has nominated a senior staff to be a liaison with the IPCU. IPCU staff is currently composed of 40 professionals from the

fields of procurement, financial management, civil engineering, mechanical engineering, electrical engineering, architecture, urban planning, communication, and monitoring and evaluation. Furthermore, the IPCU is supported by consulting firms and individual consultants for the preparation of feasibility studies, technical specifications, retrofitting and reconstruction designs, and construction supervision.

25. An existing Project Steering Committee established under the World Bank-financed ISMEP project will continue to oversee project implementation and provide strategic guidance. The Steering Committee is chaired by the Governor of Istanbul and includes Directors of the provincial departments of the concerned ministries, representatives of Istanbul Metropolitan Municipality, and Ministry of Urbanization and Environment, among others.

26. **Monitoring and Evaluation.** The results of the main component (Component B) will be evaluated through assessment of physical investments and the number of facilities retrofitted or reconstructed. In the context of evaluating project results, it should be noted that most of the outcomes of the envisaged activities will not be precisely known unless in the event of a major earthquake.

27. **AIIB's Implementation Support.** During project implementation**,** AIIB plans to field a mission twice a year to support and monitor the project activities. Also, AIIB plans to hire, as a short-term consultant (STC), an international structural engineer experienced in seismic risk reduction. The STC should be part of the implementation support missions.

28. **Procurement.** The procurement of goods, works, consulting services contracts funded partially or in whole by AIIB under the project shall be conducted in accordance with the AIIB's Procurement Policy dated January 2016 as well as its Interim Operational Directive on Procurement Instructions for Recipients dated June 2, 2016 (PIR). IPCU, as a public entity of the government, will be responsible for the procurement and contract management of the project with the support of externally hired technical and supervision consulting firms and individual experts.

29. For the implementation of the project, IPCU prepared and submitted a draft Project Delivery Strategy (PDS) together with a Procurement Plan (PP) for AIIB's review and comments. The PDS and PP has been further revised and finalized as per AIIB's comment during project preparation and are acceptable to AIIB. Specific procurement arrangements, including contract packaging, cost estimates, procurement methods, procurement timelines and prior review requirements, etc. have been detailed in the PP. PP will be further updated regularly or as needed for AIIB's review and no objection during project implementation. IPCU will carry out project procurement in accordance with the specific procurement arrangements of the PP.

30. Harmonized MDB standard bidding documents will be used for IOCT contracts with cost estimate of more than USD30 million for works and USD2 million for goods. MDB RfP will be used for consulting services contracts after their proper modifications to reflect AIIB's special requirements. The client's Model Bidding Documents in Turkish language separately for goods and works contracts, which have been accepted and used for the World Bank-funded project, will

be used for the procurement of NCT works and goods contracts subject to proper modifications and acceptance by AIIB to reflect the AIIB policy requirements.

31. **Financial Management.** The financial management system maintained by IPCU has been continuously managing IFI-financed projects. The financial management unit is responsible for financial planning, reporting, budget preparation, payments, accounting, internal control and compliance with legislation. The World Bank rated the project financial management performance as highly satisfactory upon the World Bank's loan closing in 2016. There are no material changes in project financial management since then and a Project Financial Management Manual has been prepared and deemed acceptable to AIIB.

3. Project Assessment

A. Technical

32. **Project Design.** IPCU already identified 97 buildings (schools, hospitals, and other social facilities) to be included in the project. These are priority public buildings, outside of those already committed by other IFIs, based on the established criteria. For about a half of these selected buildings (Phase 1), feasibility studies and building designs are either completed or underway.

33. The technical approach to the seismic strengthening of public buildings is two fold: firstly, retrofitting of structures where this is technically feasible and, secondly, building reconstruction where the existing poor quality does not allow for a reasonable retrofit. The criteria for (demolishing and) reconstructing existing vulnerable buildings includes minimal remaining economic life and estimated retrofitting costs higher than 40 percent of the cost of a new building of the same size[4].

34. Construction measures for retrofitting is mainly to follow conventional engineering methods well-known in Turkey and internationally, such as adding reinforced concrete shear walls, jacketing of inadequate columns, and expansion of building foundations. Advanced technologies, such as base isolation, will be introduced where appropriate. Seismic retrofitting increases strength such that a building can reach a minimum level of structural performance at the expected earthquake intensity level. This results in three distinct but related benefit streams: (i) avoided fatalities, (ii) avoided direct structural damage, and (iii) service continuity for the public facilities.

35. **Operational sustainability.** The maintenance of the seismically strengthened structures after the project implementation period will follow normal procedures used for buildings. Line ministries are responsible for allocating funds for any cost needed for operations and maintenance of these buildings. The building designs under the World Bank-financed project used better and more durable materials, included factors that reduced maintenance especially for building exteriors. Designs emphasized resource efficiency in terms of water, energy, and gas

[4] This is in alignment with the United States Federal Emergency Management Agency's guidelines

consumption, which led to lower operations and maintenance costs. The proposed AIIB-financed project will also adopt similar designs where possible. Please see Annex 2 for the ISMEP design principles.

B. Economic and Financial Analysis

36. **Economic Analysis.** The economic analysis employs cost-benefit methodology to calculate the Economic Internal Rate of Return (EIRR) and Net Present Value (NPV) of the project. The economic benefit focused on human lives protected, increasing earthquake resilience of public buildings, and energy efficiency improvements. Moreover, the project will generate many other traditional economic benefits for the users of infrastructure, including: (i) better quality of infrastructure; (ii) improved quality of services provided in retrofitted/reconstructed schools and hospital; and (iii) better usage of green technologies, etc., but these are not estimated in the cost-benefit analysis. The economic cost of the project includes the capital expenditure of proposed buildings and O&M expenses to be covered by the Ministry of Education, the Ministry of Health or other related public institutions.

37. The cost-benefit analysis applied with costs and benefits defined based on "with" and "without" scenarios. Baseline scenarios are defined and calculated as the scenario in which 97 public buildings; including 93 schools, 1 hospital building, and 3 social service and administrative buildings would not be retrofitted and/or reconstructed. Without the project, 1 hospital area would continue providing services by 30 percent less capacity and the proposed 93 schools will also continue education under poor conditions. With the project, these facilities will not only withstand the destructive effect of a potential earthquake but also provide better services.

38. Based on available data and the assumptions adopted, the EIRR for the proposed project is 17.8 percent which demonstrates the economic viability of the project. NPV at social discount rate of 10 percent is calculated as USD55 million. Sensitivity analysis has been carried out for a 20-percent increase in construction costs. Even under this extreme scenario, the investment would still provide a minimum EIRR of 11.3 percent, which is higher than the expected return of 10 percent. Further details of economic analysis are presented in Annex 3.

39. **Financial Analysis.** With all of the project's target buildings being operated by line ministries, an FIRR was not determined. Instead, the financial analysis focused on savings in operational costs to be expected following the resource efficiency improvements to be implemented under the Project. Estimates of likely operational cost savings were based on data collected by IPCU on schools improved under a previous phase of the ISMEP program, 15 of which were reconstructed and 10 retrofitted.[5] For reconstructed and retrofitted schools, the data showed a reduction in total operational costs, consisting of electricity, natural gas, and water bills, of 50 and 46 percent, respectively. Replacement and maintenance of materials over the life of the structures were not considered. The schools achieved an annual total operational cost per square meter of TL15.7 after reconstruction and TL12.8 after retrofitting. Applying the same assumptions

[5] The data is assumed to be roughly representative of the overall building stock to be reconstructed or retrofitted, given that 96 percent of the project's targeted buildings are educational facilities.

to the project's targeted facilities results in the summary of expected combined operational cost savings under the project, as shown in Table 3.

Table 3: Estimated Operational Cost Savings (in USD)

	Reconstruction	**Retrofitting**	**Project Total**
Operational Cost Savings/m²/year	2.69	1.83	**4.52**
Total Operational Cost Savings p.a.	1,051,431.53	520,120.46	**1,571,551.99**
Total Savings after 15 years	15,771,472.94	7,801,806.93	**23,573,279.87**

C. Fiduciary and Governance

40. **Procurement.** IPCU has a sufficient number of qualified and competent procurement staff. Over the past 15 years, IPCU has successfully implemented several phases of the ISMEP program, similar in nature, size and scope, funded by various IFIs. The procurement risk rating assigned to the World Bank-funded additional financing project has been rated as Low.

41. During project preparation, procurement capacity and risks have been assessed, and corresponding risk mitigation and capacity strengthening measures have been incorporated into specific procurement arrangements. This includes using support by consulting firms and individual consultants to further strengthen IPCU procurement capacity. It is envisaged that high value IOCT works contracts and QCBS consulting services contracts will be subject to AIIB's prior review. The use of client's model bidding documents for NCT works and goods contracts has been agreed, and it is subject to acceptance of modifications deemed necessary to reflect AIIB's requirements. Regular procurement post review and field supervisions will be undertaken, as well as necessary procurement training, support and advice to the client, as and when needed. On this basis, therefore, it can be concluded that IPCU has sufficient institutional and procurement capacity and is experienced to ensure the successful implementation of project procurement.

42. **Financial Management.** IPCU's financial management system was established under the World Bank-financed project in 2005, then continuously improved and maintained to manage various IFI-financed projects. The proposed project's financial team is equipped with capable professional staff who are familiar with fiduciary requirements and procedures. To ensure proper segregation of duties, one more financial staff will be hired by the end of 2019.

43. The cash-based accounting was continuously used to keep financial records and prepare project financial statements, namely designated account statements, usage and sources of loan, and usage by component/activities. Individual profile will be set up for each project in the computerized accounting system**.** Interim financial reports in the agreed format will be submitted to AIIB on a quarterly basis to reflect the usage and disbursement status. Sufficient internal control procedures and coordination mechanisms are in place and a Financial Management Manual has been prepared to standardize project financial management work. An annual project audit will be conducted by the Ministry of Treasury and Finance for compliance purpose. The overall project

financial management system will provide assurance that AIIB loan proceeds will be properly used with due efficiency and effectiveness.

44. **Funds Flow and Disbursement Arrangements.** The proceeds of the loan will be disbursed mainly through the advance method. A USD designated account will be opened for the project maintained with the central bank of Turkey and managed by IPCU. The ceiling will be a fixed USD20 million amount in accordance with government financial regulations, subject to a replenishment limit of 50 percent. The proceeds of the loan may also be disbursed using the reimbursement method. Full documentation of supporting evidences will be provided. All withdrawal applications will be prepared by IPCU and approved by the IPCU Director and Deputy Director. The approved withdrawal applications will be submitted to the Ministry of Finance and Treasury for final approval and signature, and for onward submission to AIIB. The disbursement arrangements including applicable ceilings and limits will be documented in the disbursement letter and finalized prior to loan negotiations.

45. **Projected disbursement profile.** Table 4 shows forecast of disbursements

Table 4: Forecast of Disbursements (USD million)

Fiscal Year	2020	2021	2022	2023	2024	2025	2026
Annual	32.0	40.0	54.0	65.0	65.0	40.0	4.0
Cumulative	32.0	72.0	126.0	191.0	256.0	296.0	300.0

46. **Governance and Anti-corruption.** Overall decisions on prioritization across different sectors and major decisions were taken by a high-level multi-stakeholder steering committee chaired by the governorship. This will help balance competing priorities across stakeholders and help to ensure the loan funds are transparently and properly allocated to disaster mitigation efforts. In addition, the project will select investment priorities within sectors using a transparent points system based on risk and utility, drawing on technical data about buildings, capacity, accessibility, proximity to fault lines, and other factors. This will help to avoid subjective decision-making and disputes between beneficiaries and stakeholders.

47. **AIIB's Policy on Prohibited Practices.** AIIB is committed to preventing fraud and corruption in its financing. It places the highest priority on ensuring that the projects it finances are implemented in strict compliance with the AIIB's Policy on Prohibited Practices or PPP (2016). AIIB reserves the right to investigate, directly or indirectly through its agents, any alleged Prohibited Practices relating to the Project and take necessary measures to prevent and redress any issues in a timely manner, as appropriate.

48. **Institutional Capacity.** Based on the solid performance of the current implementation model, the same institutional arrangement will be adopted for the project. IPCU is organizationally located under the Istanbul Governorship and responsible for day to day implementation activities. IPCU has been performing very well and managing public building retrofitting/reconstruction programs financed by multiple IFIs in parallel. IPCU has a proven track record and recently

increased its staffing to accommodate the needs of this large investment program and its planned scale-up.

D. Environmental and Social

49. **Environmental and Social Policy (including Standards) and Categorization.** AIIB's Environmental and Social Policy (ESP), including the Environmental and Social Standard (ESS) 1 and Environmental and Social Exclusion List are applicable to this project. The project has been assigned Category "B," under the Bank's ESP.

50. **Environmental Aspects**. An Environmental Management Plan (EMP) was prepared in accordance with the Environmental and Social Safeguard Policies of the World Bank and has been in place since the inception of the program in 2005 and was updated in 2010. The EMP has been further updated in 2019 as part of this project to reflect new regulatory requirements in Turkey and to codify existing practices related to stakeholder engagement and grievance management. The project is not expected to have any significant impact on any sensitive environmental receptors. Construction activities will temporarily result in localized noise, dust and combustion emissions, construction waste generation and potentially sedimentation of the sewage system on and near project sites. Off-site impacts will be induced by the production of construction material, including but not limited to the use of natural resources such as water and energy consumption, their transportation to site, and the disposal of debris and other waste.

51. **Climate Change Risks and Opportunities**. The project will entail improving energy efficiency and structural resilience to seismic events of targeted buildings. The public buildings targeted for reconstruction will adopt energy efficiency and water conservation measures. These buildings will be designed and certified to Turkish Energy Identify Certificate (Rank B) or international green building standards.

52. **Social Aspects.** The project will not induce any physical or economic resettlement. Social impacts will principally comprise construction-induced nuisances such as noise, dust emissions, access restriction, and risks to community health and safety for adjacent residents and structures and for concurrent users of facilities or buildings being renovated while potentially in partial use such as schools or hospitals. Public buildings targeted for reconstruction will adopt universal design principles.

53. **Cultural Resources.** None of the targeted buildings are located within registered cultural heritage areas. However, due to the historical nature of Istanbul, activities to be conducted as part of the project may take place adjacent to or near important cultural resources. During project preparation, one contractor reported a 'Chance Find' associated with a previously retrofitted building and two buildings had monument/registered trees on-site. For buildings near known cultural resources such as registered trees, contractors must receive approval by the Regional Preservation Council and mitigation measures must be put in place to protect the cultural resource. In the case of 'Chance Finds', the Regional Preservation Council will assign an expert to supervise excavation in accordance with an approved plan.

54. **Gender and Disability Aspects.** Particular attention will be paid to the inclusion of men and women in all consultations so as to ensure that their respective priorities and concerns are taken into consideration, particularly in relation to planning and execution of the Project. Opportunities for equal access to employment will also be identified. The Project will make use of universal design features for people with disabilities.

55. **Occupational Health and Safety, Labor and Employment Conditions.** During project preparation, the Bank's environmental and social specialists interviewed the contractors and supervising engineers at several construction sites. Occupational health and safety practices were assessed as adequate, and good record-keeping on-site was observed. The size and composition of the workforce was reviewed to assess potential labor risks. Most sites had small workforces (peak of 120-150 workers) that are comprised of skilled local labor. Additionally, the project does not employ day labor or migrant workers.

56. **Stakeholder Engagement, Consultation and Information Disclosure.** IPCU has benefited from over 10 years of experience in consultation and information disclosure related to the Project, which has enabled them to effectively address the questions and concerns of stakeholders, particularly users of the public buildings targeted. A dedicated social consultancy has been contracted to undertake the consultation process with stakeholders, including Project beneficiaries, prior to retrofitting or reconstruction of each building. Additionally, the EMP (in English with a Mitigation and Monitoring Plan in Turkish) has been posted on both the IPCU website as well as AIIB's website: AIIB site: https://www.aiib.org/en/projects/proposed/2019/istanbul-seismic-risk-mitigation.html; IPCU website: https://www.ipkb.gov.tr/wp-content/uploads/2017/01/ISMEP-Environmental-Management-Plan_October-2019.pdf; https://www.ipkb.gov.tr/wp-content/uploads/2019/10/ISMEP-Executive-Summary.pdf; https://www.ipkb.gov.tr/wp-content/uploads/2019/10/ISMEP-Executive-Summary_tr.pdf.

57. **Project Grievance Redress Mechanism and AIIB's Project-Affected People's Mechanism.** A project-level Grievance Redress Mechanism (GRM) has been developed, which includes multiple channels for stakeholders to raise grievances to IPCU and a process for investigating and responding to grievances. During project preparation, the functionality of the GRM was assessed through a review of several successfully closed cases. A second GRM will be established for project workers. The Project-affected People's Mechanism (PPM) will apply to this Project. The PPM has been established by AIIB to provide an opportunity for an independent and impartial review of submissions from Project-affected people who believe they have been or are likely to be adversely affected by AIIB's failure to implement its ESP in situations when their concerns cannot be addressed satisfactorily through the project-level GRM or the processes of AIIB's Management. For information on AIIB's PPM, please visit: https://www.aiib.org/en/policies-strategies/operational-policies/policyon-the-project-affected-mechanism.html.

E. Risks and Mitigation Measures

58. The overall risk of the project is low due to the fact that the ISMEP program is a well-established and highly satisfactory program. IPCU is a semi-autonomous, highly capable professional implementing agency. Many stakeholders identified the performance of the IPCU as a major driver of the success of the World Bank-financed ISMEP project (World Bank's IEG 2018). A summary of the risks is presented in Table 5 below.

Table 5: Summary of Risks and Mitigating Measures

Risk	Risk Rating	Mitigation Measure
Environmental and Social Risk	Low	The project's physical component targets only the existing buildings. No land acquisition or resettlement will be required. The environmental and social impacts are expected to be localized and temporary during the construction activities. An Environmental Management Plan has been prepared to mitigate these minor impacts. IPCU has extensive experience in managing projects as per requirements of MDBs such as the World Bank and the EIB.
Stakeholders Risk	Low	Support of stakeholders for the project is critical. Such stakeholders involve line ministries and medical service providers in case of hospitals and teachers/parents/students in case of schools. The project will ensure stakeholder consultations at a building design stage. IPCU is experienced in managing various stakeholders.
Technical Risk	Low	IPCU has a number of experienced technical staff. The project will provide a consultancy for design review and construction supervision. AIIB will also hire a short-term consultant (structural engineer experienced in seismic risk reduction) to ensure international standards of retrofitting and reconstruction.
Fiduciary Risk	Low	IPCU has a solid track record of managing procurement and financial management aspects. AIIB will continue to monitor its performance.
Institutional Risk	Medium	Institutional sustainability of IPCU is uncertain after the project closes. Also, changes in Director and other experienced staff of IPCU for whatever reasons may adversely affect project implementation. AIIB will continue to dialogue on institutional sustainability and monitor the performance of IPCU and support its capacity building.

Annex 1: Results Monitoring Framework

Project Objective:	The objectives of the project are to improve the disaster resilience of critical public facilities and to enhance emergency preparedness of the City of Istanbul.									
Indicator Name	**Unit of measure**	**Base-line 2020**	**Cumulative Target Values**					**End Target**	**Frequency**	**Respon sibility**
			YR 2021	**YR 2022**	**YR 2023**	**YR 2024**	**YR 2025**			
Project Objective Indicators:										
1. Number of beneficiaries (students, teachers, medical staff, etc.) having access to disaster resilient public fcilities	No.	0	20,000	40,000	60,000	80,000	110,000	120,000	Annual	IPCU
2. Number of key public facilities retrofitted or reconstructed under the project to resist a major earthquake	No.	0	10	20	40	50	80	90	Bi-annual	IPCU
Intermediate Results Indicators:										
1. Number of schools retrofitted or reconstructed under the project	No.	0	10	20	40	50	80	85	Bi-annual	IPCU
2. Number of hospitals retrofitted or reconstructed under the project	No.	0	0	0	0	1	1	1	Bi-annual	IPCU
3. Percentage of buildings with improved energy efficiency under the project	%	0	25	40	60	60	60	60	Bi-annual	IPCU
4. Number of school communities reached out to via consultation meetings and awareness program	No.	0	10	20	40	50	80	85	Bi-annual	IPCU

Annex 2: Detailed Project Description

1. The project's main component will finance structural strengthening of about 100 public buildings through retrofitting or reconstruction (mainly schools and hospitals, but a few other social and administrative facilities included). IPCU has identified 97 buildings proposed to be included in the project. The Phase 1 list contains 47 schools, one hospital and two social service & administrative buildings. The building designs for these Phase 1 buildings are either completed or nearing completion. The Phase 2 list contains 46 schools and one social service & administrative building. The building designs for Phase 2 is yet to be prepared, and the Phase 2 list will be finalized after the designs and cost estimates have been prepared.

2. The selection of these buildings was conducted by using the criteria established under the World Bank-financed ISMEP project. The selection process is as follows:

3. Under the leadership of the Istanbul Governorship, a comprehensive inventory of critical facilities was developed through a transparent prioritization process involving stakeholder agencies, using building-specific technical data, transport access data (hospitals and schools), distance from fault lines, importance in the Istanbul Disaster Management Plan, population on-site and general population served and other relevant characteristics depending on the type of facility, taking account criteria for each sector as indicated in the weighting formula tables below.

Table 1: Prioritization Criteria for Hospitals

No.	CRITERIA			Score
1.	**ACCESSIBILITY DURING DISASTER (× 0.20)**			**20**
	• Access from air (× 0,05)	(yes)-100	(no)-0	
	• Access from ground (× 0,15) between 0-100			
2.	**TECHNICAL FEATURES OF BUILDING (× 0.20)**			**20**
	• Construction year after 1980 (40) • Construction year before 1980 (100)			
3.	**DISTANCE TO EPICENTER (× 0,10)**			**10**
	• Distance to Fault Line >20km. (40) • Distance to Fault Line <20km. (100)			
4.	**Importance in Disaster Management Plan (Strategical Location) * (×0.40)**			**40**
5.	**Capacity (bed) (×0.10)**			**10**
	• 0-100 bed (30) • 100-500 bed (60) • 500 bed and more (100)			
	TOTAL			**100**

Table:2 Prioritization Criteria for Schools

No.	CRITERIA	Score
1.	**ACCESSIBILITY DURING DISASTER (×0.10)**	**10**

	Access between 0-100			
2.	**TECHNICAL FEATURES OF BUILDING (×0.40)**			**40**
	• Construction Year (×0.20)			
	(a)before 1965 (100)	(b)between 1965-1980 (60)	(c)after 1980 (40)	
	• Number of story (×0.20)			
	(a)> 5story (100)	(b) 3-4 story (60)	(c) 1-2 story (20)	
3.	**DISTANCE TO EPICENTER (×0.10)**			**10**
	• Distance to Fault Line >20km. (40) • Distance to Fault Line <20km. (100)			
4.	**Importance in Disaster Management Plan (Strategical Location) (×0.10)**			**10**
5.	**Number of Student (×0.20)**			**20**
	• 0-500 student (30) • 500-1000 student (60) • 1000 student and more (100)			
6.	**Working Hours (×0.10)**			**10**
	• Half day (60) • Whole day (100)			
	TOTAL			**100**

4. The ISMEP program has developed the design principles which will be adopted under the proposed project, wherever possible. Some of the key principles include:

- **Durability and lower maintenance cost:** (i) reinforced concrete used as exposed surface and only protective materials applied to buildings against dust emission and water; (ii) avoid plastering and painting in order to decrease workforce and minimum chemicals for painting; and (iii) artificial stones and marble used for extreme durability and extended lifespan of floors.
- **Energy efficiency:** (i) shafts designed for natural ventilation at each classroom; (ii) external thermal insulation systems used on roofs, basements and façades in every building; (iii) shading elements on façades and low emissivity window glasses used in every building to avoid unrequired thermal load caused by sunlight; (iv) windows and architectural design of classrooms and corridors to benefit from natural sunlight as much as possible to prevent the electric lights use in daytime; (v) install roof-top solar panels where possible; (vi) modern lighting system with energy saving used such as 3rd generation T5 bulbs; (vii) energy efficient electronic ballasts used to ensure no fluorescent flicker and noise like magnetic ballasts; (viii) different heating circuits in different zones of a building, enabling to reach the maximum heating efficiency capacity; and (ix) automatic lighting sensors.
- **Water conservation:** (i) automatic sensor faucets; and (ii) rainwater harvesting for flushing toilets and watering gardens.
- **Universal design:** (i) elevators designed for disabled in every school; (ii) WC designed and installed for disabled children in every floor in every school; and (iii) access slope for wheelchair ramps.

Annex 3: Economic and Financial Analysis

A. Methodology and Key Assumptions

1. **Methodology.** Cost-benefit analysis applied with costs and benefits defined based on "with" and "without" scenarios. The EIRR was estimated for the entire project. A positive NPV measures economic viability, a benefit-cost ratio of more than one, and an EIRR higher than the discount rate 10 percent.

2. There are 97 sites identified under the project. These sites are scattered in different districts. Due to the time constraint and the emergency nature of the project, it is difficult to conduct a detailed review and data collection of all the sites one by one.

3. Project life is assumed to be 20 years based on the economic life of infrastructure assets. The analysis covers the period from 2020 to 2040. Costs and benefits are estimated at constant 2019 prices. The exchange rate used is TRY 5.75 per 1 USD.

4. A social discount rate of 10 percent is applied. Data are based on information provided by ISMEP, previous projects, and international benchmarks where local data does not exist. Macroeconomic data are based on IMF, and TUIK (Turkish Statistical Institute).

B. Economic Benefits

5. The key economic benefits assessed include human lives protected; the value of the infrastructures protected, buildings, and other properties; and the value of a piece of land protected in the identified project area. It is assumed that these economic benefits will be averagely amortized in the 20 years after the completion of mitigation schemes. The benefits and costs are monetized at base year price levels, and all values estimated are net of inflation duties and taxes. The analysis assumes that the market prices of goods and wages do not vary much from their economic value. Therefore, there is no adjustment or conversion in market prices for shadow prices.

6. **Increasing Earthquake Resilience of Public Buildings.** Expected damage on retrofitted/reconstructed properties in case of an earthquake. The average value of the building is assumed as USD 2 million (4k m2) per school and USD 35 million (50k m2) per hospital building. It is a conservative estimation, which assumes all premises located in the project area is in the same type with unique features.

7. Majority of other infrastructure facilities along the road need to be repaired after the earthquake occurs, including electricity lines, water supply pipelines, and drainage facilities. The unit cost of fixing these infrastructures are sourced from the local authorities.

8. **Human Lives Protected.** According to the experienced data, 2(high) and 4(low) percent is assumed as the mortality rate for the people who live in these identified high-risk areas.

Averaged years loss of life (YLL) is estimated as 50 years, and average YLL in labor force estimated as 25 years per person. The recent value of GDP per Capita of 2018 has been applied in the calculation as in USD 10,540.

9. Total casulties is divided into immediate death and severe injuries. The estimated average YLL in labour force and its contribtion to total GDP is calculated as total benefit, and the cost of health expenditures of the severe injuries is deducted from the total benefit.

10. **Other Benefits.** Improving well being from better social amenities, and positive impact, particularly for the people who are receiving service under the poorly managed school and hospital buildings. Gaining a better knowledge of design and applying “green technology” and more energy-efficient and environmentally friendly public buildings.

C. Economic Costs

11. The economic cost of the project only includes capital works regarding that the relevant ministries cover the resettlement and operation and maintenance cost for each component. Taxes and duties are included in the final capital cost figures.

12. **Capital Costs.** Capital cost for public infrastructure, which will occur between 2020 and 2026. Cost estimation is based on the most recent cost estimates using government rates, including price and physical contingency as provided by IPCU.

13. **O&M Costs.** Operation and maintenance costs of public infrastructure and common facilities to be borne by the relevant Ministries. For an average school the yearly O&M cost including all staff salaries and all other expenses approximately USD 450,000. For a 90,000 m² hospital which has the capacity of 680 patient beds, 2.5 million polyclinic service per year and 65,000 surgery operations the yearly O&M cost including all staff salaries and all other expenses approximately 40 Million Euros. Total O&M cost figure includes routine repairs and maintenance, large-scale improvement works, O&M staff costs, as well as energy and utility costs.

D. Cost-Benefit Analysis Results

Year #		Eco Cost-Phase 1	Eco Cost-Phase 2	**Total Eco Cost**	**Total Eco Benefit (1)**	**Net cash flow**
1	31-Dec-19	22.0	0.0	22.0	0.0	(22.0)
2	31-Dec-20	47.8	0.0	47.8	0.0	(47.8)
3	31-Dec-21	52.7	0.3	53.0	54.6	1.6
4	31-Dec-22	22.8	23.6	46.4	54.6	8.2
5	31-Dec-23	4.9	59.4	64.3	58.1	(6.2)
6	31-Dec-24	4.9	46.9	51.8	58.1	6.3
7	31-Dec-25	4.9	12.8	17.7	58.1	40.4
8	31-Dec-26	0.0	0.0	0.0	23.0	23.0
9	31-Dec-27	0.0	0.0	0.0	24.2	24.2
10	31-Dec-28	0.0	0.0	0.0	22.2	22.2

11	31-Dec-29	0.0	0.0	0.0	22.2	22.2
12	31-Dec-30	0.0	0.0	0.0	22.2	22.2
13	31-Dec-31	0.0	0.0	0.0	22.2	22.2
14	31-Dec-32	0.0	0.0	0.0	22.2	22.2
15	31-Dec-33	0.0	0.0	0.0	22.2	22.2
16	31-Dec-34	0.0	0.0	0.0	22.2	22.2
17	31-Dec-35	0.0	0.0	0.0	22.2	22.2
18	31-Dec-36	0.0	0.0	0.0	22.2	22.2
19	31-Dec-37	0.0	0.0	0.0	22.2	22.2
20	31-Dec-38	0.0	0.0	0.0	22.2	22.2
	Total	**160**	**143**	**303**	**597**	**272**
	EIRR (FCF)	17.8%				
	Discount rate	**10%**				
	ENPV	55				

E. Sensitivity Analysis Results

14. Sensitivity analysis has been carried out a 20-percent increase in construction costs. Even under this extreme scenario, the investment would still provide a minimum EIRR of 11.3 percent, which is higher than the expected return of 10 percent.

Year #		Eco Cost-Phase 1	Eco Cost-Phase 2	**Total Eco Cost**	**Total Eco Benefit (1)**	**Net cash flow**
1	31-Dec-19	26.4	0.0	26.4	0.0	-26.4
2	31-Dec-20	57.3	0.0	57.3	0.0	-57.3
3	31-Dec-21	63.2	0.4	63.6	54.6	-9.0
4	31-Dec-22	27.4	28.3	55.7	54.6	-1.1
5	31-Dec-23	5.9	71.2	77.1	58.1	-19.1
6	31-Dec-24	5.9	56.3	62.2	58.1	-4.1
7	31-Dec-25	5.9	15.3	21.2	58.1	36.8
8	31-Dec-26	0.0	0.0	0.0	23.0	23.0
9	31-Dec-27	0.0	0.0	0.0	24.2	24.2
10	31-Dec-28	0.0	0.0	0.0	22.2	22.2
11	31-Dec-29	0.0	0.0	0.0	22.2	22.2
12	31-Dec-30	0.0	0.0	0.0	22.2	22.2
13	31-Dec-31	0.0	0.0	0.0	22.2	22.2
14	31-Dec-32	0.0	0.0	0.0	22.2	22.2
15	31-Dec-33	0.0	0.0	0.0	22.2	22.2
16	31-Dec-34	0.0	0.0	0.0	22.2	22.2
17	31-Dec-35	0.0	0.0	0.0	22.2	22.2
18	31-Dec-36	0.0	0.0	0.0	22.2	22.2
19	31-Dec-37	0.0	0.0	0.0	22.2	22.2
20	31-Dec-38	0.0	0.0	0.0	22.2	22.2
21	31-Dec-39	0.0	0.0	0.0	22.2	22.2
	Total	**192.0**	**171.5**	**363.5**	**597**	**233.3**
	EIRR (FCF)	11.3%				

Discount rate **10.0%**

Key Assumptions and Calculations

Calculation of Economic Benefits	**Unit**	**Quantity**
probability of loss	%	*2-4%*
exchange rate	USD/TL	*5.75*
Human Lives Protected		
GDP per capital (2017)	USD	10,540
number of average students per school	No.	500
average number of patients per day (e.g. Okmeydani)	No.	1,200
average life expectancy	Unit	75.8
average years loss on work force	year	25
probability of loss	%	2-4%
probability of Injury	%	1%
expected medical expenditure per person	USD	4,216
- total value of human lives protected		
Value of the Buildings Protected		
unit value per square meter	USD (per m2)	*188.5*
average unit area for school	m2	3800
average unit area for hospital	m2	100,000
total effected area	m2	549,600
# of buildings protected	No	97
Schools		93
Hospitals		1
Public Buildings		3
- total value of the buildings protected		
Total (USD)	***6,145,874***	
Benefit per School (USD)	*1,807,610*	
Benefit per Hospital (USD)	*4,338,264*	

Annex 4: Sovereign Credit Fact Sheet

A. Recent Economic Development

1. Turkey's economy grew strongly from 2001 to 2013, with GDP (nominal current US$) quadrupling from US$200.252 billion to US$950.579 billion, underpinned by a comprehensive macroeconomic and structural reform program. As a result, Turkey's GNI per capita (Atlas Method, current US$) increased to US$12,560 in 2014, putting Turkey in the upper-middle-income group.[1]

2. Following the strong performance in 2013, GDP growth slowed from 8.5% in 2013 to 3.2% in 2016, reflecting weaker final demand and investment due to sanctions from Russia and a failed coup attempt in July 2016. Amid the slowdown, a large stimulus package (including increased PPP activity) took effect in mid-2016, and a policy-driven credit program to boost consumption and investment. With the combined effect of the depreciated lira, Turkey's GDP growth rebound to 7.4% and exports increased by 11.95% in 2017. However, the stimulus package also brought volatility. The current account deficit deepened from 3.8% of GDP in 2016 to 5.6% in 2017.

3. In 2018, Turkish real GDP growth drastically declined to 2.6%, due to a series of financial and economic shocks. To begin with, the sovereign rating downgrades by rating agencies and an increase in global interest rates led to an increase in risk premiums and significant capital outflow. Then the worsened global financial markets in the second half of 2018 - compounded by a new round of turmoil in Turkey - triggered concerns on Turkey's heavy reliance on external financing sources, and whether the foreign reserves are adequate to cover the short-term debt obligation.

4. The Turkish Lira depreciated against US dollars from 3.75 in January to 6.52 in August of 2018[2]. Following the FX depreciation, inflation surged to 16.3% in 2018, which further dampened market expectations. To stabilize the exchange rate, the Turkish central bank raised the benchmark policy rate substantially to 24% in September. As a result, the FX rate stabilized at 5.2 in the last quarter of 2018. In October 2018, the Turkish government implemented the "New Economic Program (NEP)[3]" and the "Comprehensive Plan Against Inflation[4]" to restore market confidence and ease inflation pressure, which seems to be effective since the July 2019 WEO report recorded that Turkish inflation has dropped below historical averages in Q2 2019.

B. Economic Indicators

Selected Macroeconomic indicators (2015-2020)

Economic Indicators	2015	2016	2017	2018	2019*	2020*

[1] Income level use World Bank criteria and GNI per capita data, details seen: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519
[2] Monthly data from Thomson Reuters.
[3] Minister of Finance announced on 20 September 2018 a New Economic Program for the period 2019 to 2021.
[4] Minister of Finance introduced "A Comprehensive Plan Against Inflation "on 9 October 2018, freezing administrative prices on certain goods including energy, temporary suspension/cuts on VAT for certain goods and services and accelerating VAT refunds, and cuts on high interest rate loans.

Real GDP growth	*6.1*	*3.2*	*7.4*	*2.6*	*0.25***	*2.5*
CPI Inflation (average, % change)	*7.7*	*7.8*	*11.1*	*16.3*	*14.0***	*14.1*
Current account balance (% of GDP)	*-3.7*	*-3.8*	*-5.6*	*-3.6*	*0.7*	*-0.4*
Central government overall balance (% of GDP)	-1.5	-2.0	-2.2	-3.1	-3.3	-2.9
Nominal gross public debt (% of GDP)	27.6	28.3	28.5	27.8	27.9	27.9
Public gross financing needs (% of GDP)	4.7	5.3	5.1	5.6	5.1	5.7
External debt (% of GDP, end period)	46.1	46.9	53.2	54.1	54.6	54.3
Gross external financing need (% of GDP)	23.7	22.9	24.9	25.1	26.3	26.5
Gross international reserves (USD billions)	110.5	106.3	107.7	107.7	107.7	107.7
Broad money growth (M2, %)	17.1	18.3	15.7	--	--	--
Exchange rate (TRY/USD, EOP) ***	2.92	3.53	3.79	5.29	5.90	--

Note: * denotes projected figures. Italic data from IMF WEO April 2019;
** IMF Staff Concluding Statement of the 2019 Article IV Mission for Turkey published on Sep 23, 2019;
*** FX rate from Thomson Reuter, 2019 FX data as of October 14, 2019.
Source: IMF Country Report No. 18/110.

C. Economic Outlook and Risks

5. The government's "New Economic Program"[5] provides a solid foundation to tackle Turkey's economic challenges. The economy registered positive growth in the first half of 2019 and the growth is expected to be positive in 2019. Import compression and a strong tourism season have led to a remarkable current account adjustment. As market pressures have abated, the lira has recovered. A decline in inflation is expected due to the combined effects of high real policy rates, lira stability, and favorable base effects.[6]

6. Turkey's public debt ratio was 27.8% of GDP in 2018, and its government debt is sustainable under different shock scenarios.[7] The overall deficit is projected to gradually fall below 3 percent of GDP by 2024, and that debt will remain below 30% of GDP over the medium term.[8] In addition, a strong corporate debt restructuring framework is critical to supporting the deleveraging process - the absence of which could mean the difference between an orderly adjustment for the economy and a hard landing.

7. Downward risks for future development include a deterioration in sentiment towards emerging markets, possible policy implementation risks, and adverse domestic or geopolitical developments.[9]

[5] The NEP aims at supporting sustainable growth and employment, ensuring price stability and financial stability, improving current account balance and preserving central government budget deficit/GDP as the key anchor. In this regard, some of the measures to achieve these goals are as follow: Industrial Strategy Document, National Productivity Plan, Judicial Reform, revision of employment incentives, improving credit channels, deepening capital markets, performance based budgeting, tax reform, export master plan, localization of imported intermediate goods, coordination of monetary and fiscal policies, increasing competition and productivity in goods and services markets.
[6] IMF Staff Concluding Statement of the 2019 Article IV Mission for Turkey published on Sep 23, 2019.
[7] International Monetary Fund (IMF), 2018, Country Report No. 18/110– 2018 Article IV consultation—Press release; Staff report; and Statement by the Executive Board for Turkey, April 2018.
[8] IMF Fiscal Monitor Curbing Corruption April 2019.
[9] IMF Staff Concluding Statement of the 2019 Article IV Mission for Turkey published on Sep 23, 2019.