Railway Improvement and Safety for Egypt Project (P175137)

MIDDLE EAST AND NORTH AFRICA | Egypt, Arab Republic of | Transport Global Practice |
IBRD/IDA | Investment Project Financing | FY 2021 | Seq No: 2 | ARCHIVED on 27-Dec-2021 | ISR49313 |

Implementing Agencies: EGYPTIAN NATIONAL RAILWAYS, Ministry of Transport, Arab Republic of Egypt

Key Dates

Key Project Dates

Bank Approval Date: 05-Mar-2021
Effectiveness Date: 25-Aug-2021
Planned Mid Term Review Date: 21-May-2024
Actual Mid-Term Review Date:
Original Closing Date: 30-Sep-2027
Revised Closing Date: 30-Sep-2027

Project Development Objectives

Project Development Objective (from Project Appraisal Document)

To improve safety and service quality of the railway services along the Alexandria-Cairo-Nag Hammadi corridor.

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

Components

Name
Safe System Signaling Modernization:(Cost $602.00 M)
Safe System Asset Management Improvement:(Cost $54.00 M)
Project Delivery, Institutional and Human Resource Development:(Cost $24.00 M)

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	Satisfactory	Satisfactory
Overall Implementation Progress (IP)	Satisfactory	Satisfactory
Overall Risk Rating	Substantial	Substantial

Implementation Status and Key Decisions

The P175137 Railway Improvement and Safety for Egypt Project (RISE) was approved on March 5, 2021 and became effective on August 25, 2021. It is still too early a stage to report on progress towards reaching the project development objectives.

Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	Moderate	Moderate	Moderate
Macroeconomic	Moderate	Moderate	Moderate
Sector Strategies and Policies	Substantial	Substantial	Substantial
Technical Design of Project or Program	Moderate	Moderate	Moderate
Institutional Capacity for Implementation and Sustainability	Substantial	Substantial	Substantial
Fiduciary	Substantial	Substantial	Substantial
Environment and Social	Substantial	Substantial	Substantial
Stakeholders	Moderate	Moderate	Moderate
Other	Moderate	Moderate	Moderate
Overall	Substantial	Substantial	Substantial

Results

PDO Indicators by Objectives / Outcomes

To improve safety on the Alexandria - Nag Hammadi corridor

►1. Railway Accident Risk (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.56	0.56	0.56	0.44
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	The project will reduce from 0.562 to 0.440 the Fatalities and Weighted Serious Injuries (FWSI) per billion passenger kilometers (km). By reducing risk, the project improves safety in the Alexandria to Nag Hammadi corridor. FWSI is the way modern railways measure the railway accident risk. The rational for using this indicator is to align the ENR with good international practice as showcased by the European Union (EU) standard. This standard EU definition is calculated by adding the number of fatalities to 0.1 times the number of serious injuries divided by billion passenger-kms. The baseline is based on 2019 data from ENR and comprises: (a) data on fatalities and serious injuries where ENR's procedures have failed; and (b) 1% of fatalities and serious injuries where other factors have been involved. This indicator is a composite hybrid formulation to enable the ENR to work toward the EU standard. The target is to reduce the baseline indicator by 4% per annum over the project duration. This indicator has three sub-indicators by type of collisions that can lead to fatalities and serious injuries: (a) train colliding with another train or fixed structure (buffer or end block); (b) train colliding with a pedestrian, typically reported as "hit by train;" and (c) train colliding with a road vehicle, typically reported not as a standard rail collision but as "collision with road vehicle." This disaggregation seeks to enrich the root analysis that ENR can perform to learn how to further improve its safety levels.			

□1.1 FWSI per billion passenger km caused by train colliding with another train or fixed structure (Number, Custom Breakdown)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.45	0.45	0.45	0.35
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027

□1.2 FWSI per billion passenger km caused by train colliding with a pedestrian (Number, Custom Breakdown)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.08	0.08	0.08	0.06
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027

□1.3 FWSI per billion passenger km caused by train colliding with a road vehicle (Number, Custom Breakdown)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.04	0.04	0.04	0.03
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027

►2. Occupational Health & Safety Risk for ENR employees along the Alexandria - Nag Hammadi line (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.30	0.30	0.30	0.24
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	The Project will reduce the Lost Time Injury Frequency Rate (LTIFR) from 0.303 to 0.237 per 100,000 hours worked in the Alexandria – Nag Hammadi line. The LTIFR is the way modern railways measure the health and Safety (H&S) risk. By reducing risk to ENR employees, the project improves safety. This indicator also reflects the holistic and systemic view of safety embedded in the project. The LTIFR is a standard industry good practice and it is the number of incidents where a worker/employee has lost time at work (1 hour and above) due to an injury sustained at work. The rational for using this indicator is to align the ENR with international good practice as showcased by the European Union (EU) standard. The indicator is normalized per 100,000 hours worked. The calculation for the baseline assumes the ENR's 47,000 employees working 1600 hours per year (excludes public holidays, religious festivals, weekends, annual leave). Further refinement to this data may be available at a later date. This is a total of 75,200,000 working hours.			

To improve rail service quality along the Alexandria-Cairo-Nag Hammadi corridor.

►3. Train Punctuality (Percentage, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	75.00	75.00	75.00	90.00
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	Punctuality is an internationally used measure of the timeliness in train running in compliance with the timetable. Punctuality is generally measured taking into account a time margin of arrival, especially for longer distance trains, although that definition is not universal. As long as the same definition is used, a			

	comparison over time can be made. For network reliability, train punctuality will be used as a proxy pending more accurate data from the ENR. Train punctuality is therefore the arrival within a certain number of minutes of planned arrival time of the train to the terminal station, 15 minutes for long-distance (PLD) trains and 10 minutes for short-distance (PSD) trains, as indicated by the ENR. The upgraded signaling will improve schedule recovery time also. During the implementation of the modernization of signaling system (first 4-5 years of the project), the timetable will need to be adapted to accommodate the execution of works in parallel with the train circulation. The works will impose speed restrictions and extended duration of travel from origin to destination station. The updated timetable issued for the periods of works on each railway line will be used as reference for an accurate calculation of the punctuality of trains. The ENR will also measure the time of delay over the timetable excluding any effect of the signaling and track upgrade works. They will do this by calculating the difference in time between a hypothetical unaffected train compared to the actual delay incurred by the works.

□3.1 Train Punctuality Passenger Long Distance Cairo Alexandria and Cairo - Nag Hammadi (Percentage, Custom Supplement)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	75.00	75.00	75.00	90.00

□3.2 Train Punctuality Passenger Short Distance Cairo Alexandria and Cairo - Nag Hammadi. (Percentage, Custom Supplement)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	75.00	75.00	75.00	90.00

►4. User Satisfaction with ENR passenger services (Percentage, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	60.00	60.00	60.00	80.00
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027

Comments:	This indicator has two parts. The first part measures user satisfaction with railway service on the intervened corridor and therefore is related to the improving quality of service part of the development objective. The ENR carries out periodic surveys that ask users to rate attributes such as air conditioning, cleanliness, ticket availability, customer service and staff, train time, and service level. In other surveys the ENR asks about delay in train arrival, overall trip evaluation, and staff attitude. The project has direct influence on train time or late arrival (punctuality) and on service level or trip quality. These two categories –train time, delay in arrival; and service level, overall trip evaluation– are the main attributes to examine for rating purposes with equal weight. The survey will use a 5-point Likert scale (1: highly unsatisfied; 2: moderately unsatisfied; 3: neutral; 4: moderately satisfied; 5: very satisfied), asking whether the user is satisfied with each of the attributes measured. Those who answer 4 or 5 would be counted as “satisfied.” The project will improve the rating for 60% to 80% for these two attributes. Survey must report the respondents’ gender. For overall quality assessment including gender considerations, evaluators will also examine the ratings in cleanliness, ticket availability, and customer service and staff. Trends in the ratings are particularly important to analyze changes. Hence reporting is yearly for this part. ENR will publish the results of the analysis of the surveys and indicate next steps to improve quality where needed. The second part of the indicator measures user perception with the quality of improvements at stations (component 2) and will designed with Bank support prior to commencement of works in this component to establish the baseline. This survey will be repeated at Mid-Term Review and at closing. This survey will also use a 5-point Likert scale (1: highly unsatisfied; 2: moderately unsatisfied; 3: neutral; 4: moderately satisfied; 5: very satisfied) in the questionnaire, asking whether the user is satisfied with attributes the project intervenes at stations. Those who answer 4 or 5 would be counted as “satisfied.” The target value for this indicator is specified in the range of 90 percent of passengers responding to a 4 or 5 to the survey on satisfaction of project’s activities of the pilot stations. Survey must report the respondents’ gender. These surveys must also capture stakeholder engagement and their satisfaction with the works at stations financed by the project. During implementation, the ENR will also publish the results of the analysis of these surveys at baseline, MTR, and project closing. The ENR will indicate next steps to improve implementation of this component and quality of works.

4.1 User satisfaction female users of ENR services (Percentage, Custom Supplement)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	60.00	60.00	60.00	80.00

►5. Performance-based funding for ENR (Yes/No, Custom, PBC)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	16-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	The project will promote a major reform to improve the efficiency and accountability of the ENR through the adoption of Public Sector Obligations (PSO) and Multi-Annual Infrastructure MAI Contracts. The implementation of the PSO and MAIC mean that the ENR receives performance-based funding. Currently, the Ministry of Finance pays contributions (subsidies) to ENR with no linkage to performance. This indicator will be achieved when the ENR and the MOT and/or the MoF sign PSO and MAI contracts that meet the intended scope and KPIs. The achievement of this outcome indicator means that the Performance-Based Condition was met. See please section “Verification Protocol Table: Performance-Based Conditions” for more details. Annex 1 of the PAD also presents more details.			

Intermediate Results Indicators by Components

1. Safe System Signaling Modernization

►Functioning GRM for project related complaints (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	0.00
Date	31-Dec-2020	17-May-2021	31-Oct-2021	30-Jun-2021
Comments:	This indicator assesses the efficiency and the functionality of the grievance mechanism system in place for the project by measuring the grievances received, the solution given, and the time taken to solve the issue. The indicator reports the grievances not solved after three months to track deficiencies in the GRM. The indicator also tracks the number of grievances received. The indicator also tracks the number of grievances received. The baseline and target are zero to reflect that zero grievances should be outstanding after three months. A positive number will indicate the GRM needs improvement. This indicator will also measure that a self-assessment of ENR grievance mechanism against the guiding principles of the grievance mechanism as per ESS10 has been conducted and based on the assessment, and with support from the World Bank, that the ENR has developed an Action Plan that addresses the root causes of the grievance to prevent repetition.			

►Signaling towers commissioned in Alexandria – Cairo – Nag Hammadi (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	21.00	25.00	28.00	70.00
Date	31-Dec-2020	17-May-2021	31-Oct-2021	30-Dec-2026
Comments:	Signaling tower refers to the technological building hosting the signaling control room with all related equipment and all stations and the tracks between stations controlled by the respective signaling tower.			

	Commissioning refers to putting into operation the modernized signaling and ancillary equipment such as cables, computers, software, point machines, signals, power supply, telecommunication equipment, rehabilitated track and turnouts in all stations and along the entire lengths of track controlled by the respective signaling tower, and so on. The four segments rolled over from the ENRRP have 51 signaling towers and the Cairo – Beni Suef segment has 19. In the Monitoring Plan the indicator is disaggregated by segment.

►Centralized Traffic Control Centers (CTC) commissioned in Alexandria-Cairo-Nag Hammadi (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	4.00
Date	31-Dec-2020	17-May-2021	31-Oct-2021	30-Dec-2026
Comments:	The Centralized Traffic Control (CTC) represents a centralized office that controls remotely all railways interlockings and the entire traffic flows along a part of the railway network (usually a railway section of 100-250 km). All signaling towers installed along the respective railway section are connected to the CTC and are subordinated to it for traffic management purposes. Commissioning of the CTC means the CTC and all subordinated signaling towers are interconnected and operational according to the project specifications. There are five CTCs in the entire alignment, four belong to the rolled over segments from the ENRRP, and one for the Cairo-Beni Suef segment. Indicator is disaggregated accordingly.			

►GHG emissions from transport on the Alexandria – Nag Hammadi corridor (Percentage, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	-6.90
Date	01-Jan-2021	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	Green House Gas (GHG) emissions of railways and competing intercity transport modes (e.g., cars, buses and trucks) in CO2 equivalent, along the project corridors from Alexandria through Nag Hammadi. The project will reduce GHG emissions because of improved operational efficiency in ENR passenger and freight services and thanks to a modal shift from cars and trucks.			

2. Safe System Asset Management Improvement

►Design and deployment of the Safety Management System (SMS) at ENR. (Percentage, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	80.00
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	This indicator measures the progress of the establishment of a safety culture at the ENR through the design and deployment of a SMS and training of staff in safety culture through the SMS which has already begun but has had difficulty with implementation. An effective SMS designed and implemented, will have a positive impact on safety issues at stations and other parts of railway operations. Safer operation of the railway is the higher level outcome and is one that will generate public, political and staff confidence in the ENR, through better safety and asset management outcomes, and will lead to a sustainable railway. The SMS includes an Asset Management System embedded within it. Higher rates of equipment reliability which will support the change in the ENR personnel's attitude to current technology work-arounds that lead to unsafe practices. In the Monitoring plan there is one sub-indicator for this indicator: Number of ENR staff trained on the structure, objectives, and main tenets of a Safety Management System (SMS) that should also be tracked.			

►Fire safety at stations (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	10.00
Date	20-Jan-2021	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	This indicator measures the implementation of comprehensive fire safety plans at stations and workshops in accordance with the ENR fire safety department standards on the alignment. The fire safety plan includes, among other things, fire extinguishers, sprinklers, and training of the station head and other station personnel so the plan can be implemented. The training will include drills.			

►Pedestrian barriered level crossings installed and operational (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	10.00
Date	04-Nov-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	This indicator measures the number of pedestrian barriered level crossings that are operational. This indicator measures a key element of physical safety equipment installed on the track. The objective is to increase the number of operational pedestrian barriered level crossings. Pedestrian barriers are different to road barriers because they provide a specific pedestrian path across the railway track which avoids the use of the roadway for pedestrians. Pedestrian barriers are usually immediately adjacent to road barriers but can also be installed at separate locations of high foot traffic.			

►Precursors to Incidents Reported by ENR Staff (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	1,000.00
Date	02-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	The reporting of these precursor occurrences indicates the potential risks of future accidents. Some precursors are: broken rails, track buckles, signals passed at danger, wrong side signaling failures, broken wheels, and broken axles. The rationale for using this indicator is to align the ENR with good international practice as showcased by the EU standard. The objective is to reduce the number of precursors to incidents. Precursors to collisions are events that could lead to a fatal collision if some other form of intervention was not applied. Precursors to derailments are events that could lead to a fatal derailment where all wheels of the train stay on the track but that the circumstances could very easily lead to a fatal derailment. The indicator ensures that all precursors are reported and are given equal weight. The idea is to encourage ENR staff to report to reflect a culture of safety.			

►Length of Cairo-Giza-Beni Suef corridor segment served by signaling system with mitigation measures to identified climate and disaster risks (Kilometers, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	125.00
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	The project upgrades track and signaling systems including signaling towers on the Alexandria-Nag Hammadi corridor. The technical specifications for all these assets must embed climate and natural disaster resilience parameters. Known risks for the project area include extreme temperature, extreme precipitation and flooding, drought, strong winds and earthquakes. Bidding documents for track and signaling works for the Cairo-Giza-Beni Suef segment will address measures to mitigate these climate and disaster risks. Signaling towers control traffic of assigned railway segments, typically several stations per			

	control tower. The indicator is defined as follows: when works complete that is, a signaling tower is commissioned and the modern signaling system becomes functional for the particular segment of the corridor, then climate and disaster risk-resilient signaling system now serves the segment. The length of the corridor segment covered by the signaling tower will be added to the indicator to be reported. The Cairo-Giza-Beni Suef corridor is 125km in length, and the baseline value is 0, and the target value is 125. Design and works will occur during the first several years of implementation, and climate and disaster resilient signaling system will be in place toward the end of project implementation showing an S-shaped progress curve.

3. Project Delivery, Institutional and Human Resource Development

►Female graduates recruited in ENR in a wide range of engineering roles (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	215.00	215.00	215.00	240.00
Date	31-Dec-2020	17-May-2021	31-Oct-2021	31-Mar-2027
Comments:	This indicator measures the number of female graduates recruited by the ENR for a wide range of engineering roles from civil to electrical to mechanical to signal engineer. The rationale for this indicator is to encourage women's recruitment in roles that tend to be male dominated in the ENR and broadly in the transport sector, one of which is engineering, and aims to facilitate education to job transition of female graduates with relevant education profile.			

►Steering Committee established and meets periodically (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	23-Oct-2020	17-May-2021	31-Oct-2021	30-Sep-2021
Comments:	The MoT will establish a steering committee (SC) that will include MoF and MoIC and represnetatives of other ministries as needed . The SC will lead the reform effort at ENR that will result in the adoption of the PSOC and MAIC.			

►Policy Reform Preparatory Analysis for PSOC and MAIC (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	02-Dec-2020	17-May-2021	31-Oct-2021	30-Jun-2023
Comments:	The scope of the preparatory analysis will include three key elements: (a) preparatory analytical work and help with adoption of the PSO contract; (b) preparation work and help with adoption of the MAIC; and (c) preparation of supporting business plans for each of the business units in ENR.			

Performance-Based Conditions

►PBC 1 5. Performance-based funding for ENR (Yes/No, Outcome, 29,000,000.00, 0.00%)

	Baseline	Actual (Previous)	Actual (Current)	Any time during project implementation
Value	No	No	No	--
Date	--	17-May-2021	15-Dec-2021	--

Data on Financial Performance

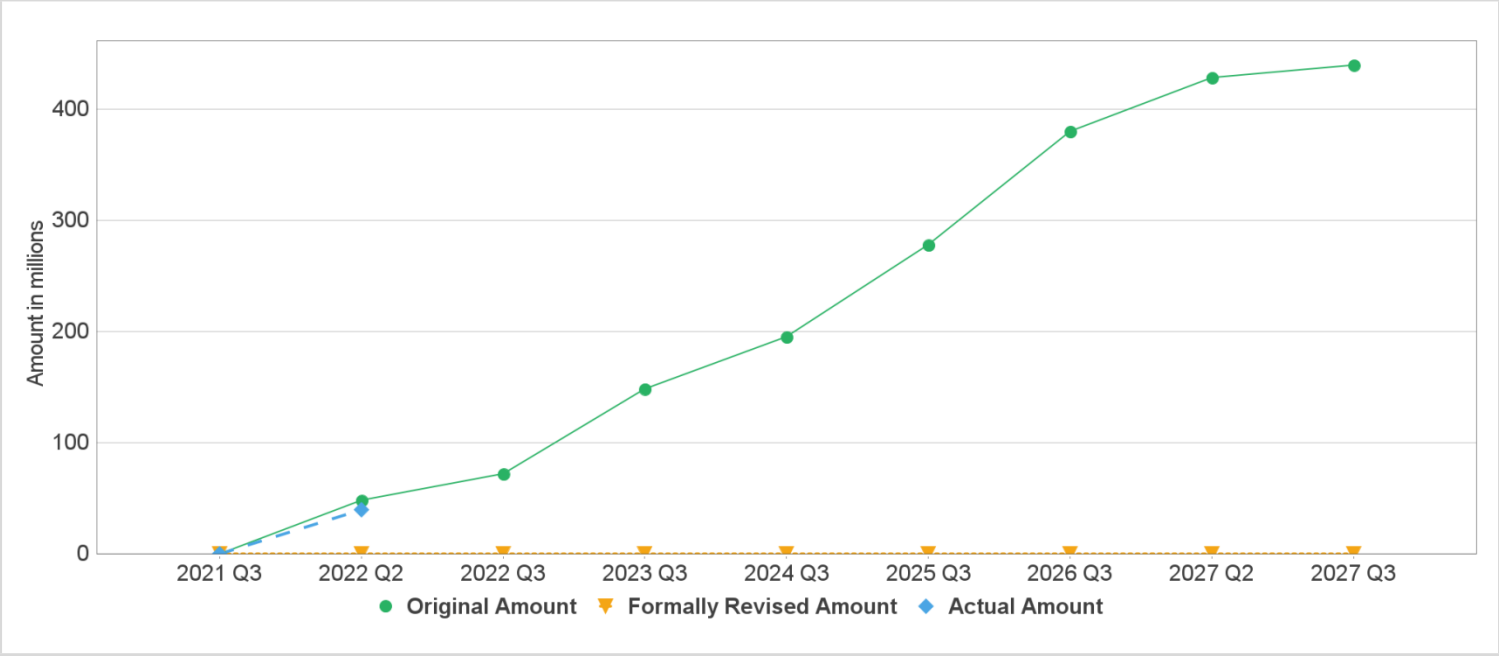
Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P175137	IBRD-92090	Effective	USD	440.00	440.00	0.00	40.62	397.34	9.3%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P175137	IBRD-92090	Effective	05-Mar-2021	28-Apr-2021	25-Aug-2021	30-Sep-2027	30-Sep-2027

Cumulative Disbursements



PBC Disbursement

PBC ID	PBC Type	Description	Coc	PBC Amount	Achievement Status	Disbursed amount in Coc	Disbursement % for PBC

Restructuring History

There has been no restructuring to date.

Related Project(s)

There are no related projects.