



Country Operations Business Plan

October 2016

India
2017–2019

This document is being disclosed to the public in accordance with ADB's Public Communications Policy 2011.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 19 October 2016)

Currency unit	–	Indian rupee(s) (Re/Rs)
Re1.00	=	\$0.01499
\$1.00	=	Rs66.7145

ABBREVIATIONS

ADB	–	Asian Development Bank
COBP	–	country operations business plan
MFF	–	multitranche financing facility
OCR	–	ordinary capital resources
SASEC	–	South Asia Subregional Economic Cooperation
TA	–	technical assistance

NOTE

In this report, "\$" refers to US dollars.

Vice-President	W. Zhang, Operations 1
Director General	H. Kim, South Asia Department (SARD)
Country Director	M. T. Kho, India Resident Mission, SARD
Team leader	R. Singh, Senior Country Specialist, SARD
Team members	N. Kulkarni, Senior Programs Officer, SARD B. Rout, Programs Analyst, SARD

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

CONTENTS

	Page
I. CONSISTENCY OF BUSINESS PLAN WITH COUNTRY PARTNERSHIP STRATEGY	1
II. INDICATIVE RESOURCE PARAMETERS	1
III. SUMMARY OF CHANGES TO LENDING AND NONLENDING PROGRAMS	2
APPENDIXES	
1. Country Assistance Results Areas	3
2. Indicative Assistance Pipeline	4
3. Assistance Program for Current Year	15
4. Indicative Knowledge Publications and Events	20

I. CONSISTENCY OF BUSINESS PLAN WITH COUNTRY PARTNERSHIP STRATEGY

1. The country operations business plan (COBP), 2017–2019 marks a transition into a period beyond the ongoing India country partnership strategy, 2013–2017,¹ which is aligned with India's Twelfth Five-Year Plan objectives, and the Asian Development Bank (ADB) Strategy 2020.² The COBP reflects a continued fine-tuning of the ADB program in support of the government's priority areas and flagship initiatives.

2. The COBP contributes to the three strategic pillars of the country partnership strategy: inclusive growth, environmentally sustainable growth, and regional cooperation and integration (RCI). The entire 2017–2019 lending program will contribute to inclusive economic growth. Environmental sustainability will be supported by nearly two-thirds of the proposed program. Initiatives relating to the East Coast Economic Corridor, port subsector, and South Asia Subregional Economic Cooperation (SASEC), constituting 10% of the program, will support RCI.

II. INDICATIVE RESOURCE PARAMETERS

3. India, a group B developing member country, is eligible for regular OCR lending. The indicative resources available during 2017–2019 for sovereign operations amount to \$7.36 billion. The proposed cumulative lending program for the 3-year period is estimated at \$10.67 billion. Overprogramming of 45% is expressly included in order to realize the Government of India's and ADB's plan to scale-up the India program and support greater project readiness. Sovereign lending operations will be supplemented by nonsovereign resources. Cofinancing and funding from other sources, including the OCR–RCI set-aside, will be additionally explored.

4. The predominant focus of the 3-year program will continue to be infrastructure development. The sector allocations of the indicative 2017–2019 pipeline reflect the government's priorities and the areas of ADB's comparative advantage. In terms of resources, the transport sector will account for 26% of the program, water and other urban infrastructure and services 29%, and energy 24%. The agriculture, natural resources, and rural development sector accounts for 8%; education 4%; and finance and public sector management 9%.³

5. The program includes projects on ports, smart cities, and economic corridors, reflecting new and expanded areas of assistance; and increased orientation towards integrated, multisector approaches that are expected to have a multiplier effect on attainment of development outcomes. As before, leveraging finance and knowledge, capacity development, and gender mainstreaming will be integral elements of the program.

6. The technical assistance (TA) program will primarily support the preparation of the lending program, and ADB's strategic and thematic priorities. The TA pipeline will continue to support a strong knowledge program and, through the Capacity Development Resource Centre, efforts for institutionalizing capacity development.

7. ADB's nonsovereign operations will focus on infrastructure and financial markets, particularly in the areas of renewable energy, water and waste management, transport and logistics, health and education, affordable housing, financial inclusion, agriculture, and small and medium-sized enterprises, including public–private partnerships in these sectors. Synergy with sovereign operations will be maintained where possible.

¹ ADB. 2013. *India: Country Partnership Strategy (2013-2017)*. Manila.

² ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

³ An update on the Country Assistance Results Areas is provided in Appendix 1. The indicative assistance pipeline for 2017-2019 is presented in Appendix 2, and the assistance program for 2016 is reflected in Appendix 3. Appendix 4 lists the indicative knowledge publications and events.

III. SUMMARY OF CHANGES TO LENDING AND NONLENDING PROGRAMS

8. Sector-wise changes to the lending program are outlined below.

- (i) **Transport:** The Mumbai Metro; Vadhavan and Colachel ports projects; and a new state highways project, have been added to 2018/2019. State highways projects in Rajasthan and Karnataka are shifted to 2017 to achieve better project readiness and the Jharkhand State Roads III project has been moved to 2019. The railway subsector pipeline has been streamlined to include a scaled down railway energy efficiency project, and tranche 3 of the Railway Sector Investment Program, rescheduled to 2018. The SASEC port connectivity project and tranche 2 of the SASEC Road Connectivity Investment Program have been rescheduled to 2018, and a sequel to the latter moved to 2019. The second Jaipur metro project has been moved to 2019. Previously proposed national highways projects, a metro project in Pune, and state road projects in the northeast have been dropped.
- (ii) **Energy:** Additions to the pipeline are the Interstate Natural Gas Pipeline Project in 2017; the feeder separation project in Maharashtra, Mumbai Efficient Transport and Electricity Distribution Project, and Sillahalla Pumped Storage Project in 2018. The Solar Park Transmission Project and tranches of multitranche financing facilities (MFFs) in Assam and Himachal Pradesh are shifted to 2017. Projects in Odisha and Andhra Pradesh have been resized and moved to 2018/2019, and the smart grid project in Gujarat is rescheduled to 2019. Previously proposed projects in Assam, Madhya Pradesh, and Bihar have been dropped.
- (iii) **Urban:** The West Bengal Urban Development Program has been added. Tranche 2 of the Kolkata Environmental Improvement Investment Program was advanced to 2016, and tranche 3 proposed to be added in 2018. The Madhya Pradesh project is rescheduled to 2017, to be followed by additional financing in 2019. Tranches of ongoing MFFs in Assam, Bihar, and Karnataka; and tranche 4 of Infrastructure Development Investment Program for Tourism are deferred to 2017/2018. The previous MFF on smart cities has been scaled down and moved to 2018. The earlier MFF on Swachh Bharat Mission has been restructured into state projects in West Bengal and Tamil Nadu, addressing elements of national urban flagship programs in an integrated manner, and have been moved to 2018/2019. The Bangalore cluster city; and water and sewerage projects in Ahmedabad, and Nagpur and Pune have been excluded.
- (iv) **Agriculture and natural resources:** A rain water harvesting project in Meghalaya has been added. The irrigation project in Madhya Pradesh has been renamed, resized, and advanced to 2017, to be followed by additional financing in 2018. Second tranches of the Sustainable Coastal project, and the flood management project in Assam, have been rescheduled to 2017. A national irrigation efficiency project, Agribusiness Infrastructure Development Investment Program (tranche 3), and a sequel to the Cauvery delta project have been dropped.
- (v) **Education:** State skills projects in Himachal Pradesh, Madhya Pradesh, and Odisha are rescheduled to 2017. Previously proposed pipeline projects to support the national skills ministry and skills development in selected sectors have been dropped.
- (vi) **Finance and public sector management:** The rationalized program includes Solar Rooftop Investment Program advanced to 2016; the bond guarantee fund project resized and moved to 2019; and the West Bengal State Finance Development Program shifted to 2017.

9. The TA program is adjusted to align with the lending program, and ADB's strategic agendas and drivers of change.

COUNTRY ASSISTANCE RESULTS AREAS

Key Country Development Outcomes that ADB Contributes to	ADB		
	Key Areas of Assistance	Indicative Resource Allocation in 2017–2019	Changes from Last COBP ^a
1. Energy			
Increased and efficient use of energy, including renewable energy	Electric power transmission and distribution network strengthening and loss reduction, gas pipeline network strengthening and supporting city gas development, capacity development of state utilities, renewable energy, energy efficiency, supporting cross-border power transmission lines and gas pipelines, and creating an enabling environment for private sector participation	Amount: \$2.5 billion (OCR) and \$50 million (cofinancing) Share of COBP envelope: 24%	Six projects have been dropped and four have been added.
2. Transport			
Increased, more efficient, and sustainable movement of people and goods	Railway infrastructure and rolling stock, expressways, national roads, state roads, district and rural roads, ports, public transport, urban transport planning and reforms, PPPs, and multimodal transport facilities	Amount: \$2.8 billion (OCR) Share of COBP envelope: 26%	Eight projects have been dropped and three have been added.
3. Water and Other Urban Infrastructure and Services			
More people enjoy improved supply of drinking water and sanitation services	Drinking water system, sanitation systems, industrial wastewater, wastewater management, tariff policy and sector development, urban governance, urban planning, urban environmental policies, smart cities, PPPs, and urban health care	Amount: \$3.1 billion (OCR) and \$60 million (cofinancing) Share of COBP envelope: 29%	Seven projects have been dropped and five have been added.
4. Finance			
Increased infrastructure (economic and social) investment to sustain high growth	Infrastructure investment funds, finance sector policies and strategies, and PPPs	Amount: \$685 million (OCR) Share of COBP envelope: 6%	Four projects have been dropped.
5. Agriculture, Natural Resources, and Rural Development			
Increased agricultural (or food) production and efficient use of water and natural resources	Farm production enhancement, agribusiness, crop and noncrop value chain infrastructure and investments, surface and groundwater irrigation, irrigation systems management, flood protection, flood risk management, ecosystem management, marine ecosystem and coastal resources, and PPPs	Amount: \$868 million (OCR) Share of COBP envelope: 8%	Three projects have been dropped and two have been added.
6. Public Sector Management			
Efficient use of public finances.	Public expenditure and fiscal management, revenue mobilization, reforms and restructuring	Amount: \$300 million (OCR) Share of COBP envelope: 3%	No change
7. Education			
Increased educational attainment of skilled labor force.	Reform and scaling up of technical and vocational education and training; introduction of vocational education at the high school and college levels; PPPs; industry engagement; and strengthening of assessment, certification, and monitoring of results	Amount: \$432 million (OCR) Share of COBP envelope: 4%	One project has been dropped and one has been added.

ADB = Asian Development Bank, COBP = country operations business plan, OCR = ordinary capital resources, PPP = public–private partnership.

^a The last COBP was for 2016–2018.

Source: ADB estimates.

INDICATIVE ASSISTANCE PIPELINE

Table A2.1: Indicative Lending Products, 2017–2019

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/PDA	Cost (\$ million)						
						ADB				Gov't	Co-finance	
						Total	OCR	COL	ADF Grants			Total
2017 Firm												
1. Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (tranche 2)	ANR	GI	IEG, ESG, GEM, GCD	SAER		89.4	71.5	0.0	0.0	71.5	17.9	0.0
2. Sustainable Coastal Protection and Management Improvement Investment Program (tranche 2)	ANR	GI	IEG, ESG, PSD, KNS	SAER		93.6	65.5	0.0	0.0	65.5	28.1	0.0
3. Madhya Pradesh Irrigation Efficiency Improvement Project	ANR	TI-G	IEG, ESG, GEM, PSD, GCD	SAER	2015	500.0	350.0	0.0	0.0	350.0	150.0	0.0
4. Himachal Pradesh Skills Development Project	EDU	GI	IEG, GEM, PSD, GCD	SAHS	2015	100.0	80.0	0.0	0.0	80.0	20.0	0.0
5. Madhya Pradesh Skills Development Project	EDU	GI	IEG, GEM, PSD, GCD	SAHS		214.3	150.0	0.0	0.0	150.0	64.3	0.0
6. Odisha Skills Development Project	EDU	GI	IEG, PAR, PSD, GCD, GEM	SAHS	2013	162.0	102.0	0.0	0.0	102.0	60.0	0.0
7. Assam Power Sector Investment Program (tranche 3)	ENE	GI	IEG, ESG, GCD	SAEN		306.0	200.0	0.0	0.0	200.0	106.0	0.0
8. Himachal Pradesh Clean Energy Transmission Investment Program (tranche 3)	ENE	GI	IEG, ESG	SAEN		158.8	127.0	0.0	0.0	127.0	31.8	0.0
9. Interstate Natural Gas Pipeline (tranche 1)	ENE	GI	IEG, ESG	SAEN	2016	292.9	205.0	0.0	0.0	205.0	87.9	0.0
10. Solar Transmission Sector Project	ENE	GI	IEG, ESG, GCD, KNS, PAR	SAEN	2015	450.0	175.0	0.0	0.0	175.0	225.0	50.0
11. Innovative Municipal Financing Facility	FIN	GI	IEG, PSD, GCD	SAPF		357.2	250	0.0	0.0	250.0	107.2	0.0

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/ PDA	Cost (\$ million)						
						Total	ADB			Gov't	Co-finance	
							OCR	COL	ADF Grants			Total
12. West Bengal State Finance Sector Development Program	PSM	GI	IEG, PSD, GCD, KNS, PAR	SAPF		300.0	300.0	0.0	0.0	300.0	0.0	0.0
13. Karnataka State Highways Improvement III Project	TRA	GI	IEG, ESG, PSD	SATC	2014	620.0	350.0	0.0	0.0	350.0	270.0	0.0
14 Rajasthan State Highways Investment Program	TRA	GI	IEG, ESG, GCD, PSD	SATC		655.0	220.0	0.0	0.0	220.0	435.0	0.0
15. Second Rural Connectivity Investment Program (tranche 1)	TRA	GI	IEG, ESG, GEM	SATC	2014	250.0	125.0	0.0	0.0	125.0	125.0	0.0
16. Bihar Urban Development Investment Program (tranche 2)	WUS	TI-M	IEG, ESG, GEM, PSD, GCD	SAUW		204.3	143.0	0.0	0.0	143.0	61.3	0.0
17. Delhi Water Supply Improvement Investment Program (tranche 1)	WUS	TI-M	IEG, ESG, GEM, PSD, GCD	SAUW	2013	207.1	145.0	0.0	0.0	145.0	62.1	0.0
18. Karnataka Integrated Urban Water Management Investment Program (tranche 2)	WUS	TI-M	IEG, ESG, PSD, GCD, GEM, KNS, PAR	SAUW		167.1	75.0	0.0	0.0	75.0	32.1	60.0
19. Madhya Pradesh Urban Services Improvement Project	WUS	TI-M	IEG, ESG, GEM, PSD	SAUW	2014	380.0	266.0	0.0	0.0	266.0	114.0	0.0
Total (2017 Firm)						5507.7	3400.0	0.0	0.0	3400.0	1997.7	110.0
2017 Standby												
1. Maharashtra Feeder Separation and High Voltage Distribution System - Project 1	ENE	GI	IEG, ESG, GEM, GCD	SAEN	2016	580.0	400.0	0.0	0.0	400.0	180.0	0.0
2. Mumbai Efficient Transport and Electricity Distribution Improvement Project	ENE	GI	IEG, ESG, GCD, KNS	SAEN		500.0	350.0	0.0	0.0	350.0	150.0	0.0
3. Odisha Power Sector Assistance Project	ENE	GI	ESG, IEG, GCD	SAEN	2016	286.0	200.0	0.0	0.0	200.0	86.0	0.0
4. Railway Energy Efficiency Project	TRA	GI	IEG, ESG	SATC		140.0	70.0	0.0	0.0	70.0	70.0	0.0

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/ PDA	Cost (\$ million)						
						Total	ADB			Total	Gov't	Co-finance
							OCR	COL	ADF Grants			
5. Railway Sector Investment Program (tranche 3)	TRA	GI	IEG, ESG	SATC		240.0	120.0	0.0	0.0	120.0	120.0	0.0
6. SASEC Port Connectivity Investment Program (tranche 1)	TRA	GI	IEG, RCI	SATC	2011	286.0	200.0	0.0	0.0	200.0	86.0	0.0
7. Assam Urban Infrastructure Development Investment Program (tranche 2)	WUS	TI-M	IEG, ESG, GEM, PSD, GCD	SAUW		173.8	139.0	0.0	0.0	139.0	34.8	0.0
8. Infrastructure Development Investment Program for Tourism (tranche 4)	WUS	GI	IEG, ESG, GEM, PSD, GCD	SAUW		56.0	39.2	0.0	0.0	39.2	16.8	0.0
9. Smart City Investment Program (tranche 1)	WUS	TI-M	IEG, ESG, GEM, PSD, GCD, KNS, PAR	SAUW		200.0	100.0	0.0	0.0	100.0	100.0	0.0
10. West Bengal Water Supply Improvement Project	WUS	TI-M	IEG, ESG, GEM, PSD, GCD, KNS, PAR	SAUW		580.0	400.0	0.0	0.0	400.0	180.0	0.0
Total (2017 Standby)						3041.8	2018.2	0.0	0.0	2018.2	1023.6	0.0
2018 Firm												
1. Karnataka Integrated and Sustainable Water Management Investment Program (tranche 2)	ANR	GI	IEG, ESG, GEM, GCD, KNS, PAR	SAER		170.0	119.0	0.0	0.0	119.0	51.0	0.0
2. Maharashtra Feeder Separation and High Voltage Distribution System - Project 1	ENE	GI	IEG, ESG, GEM, GCD	SAEN	2016	580.0	400.0	0.0	0.0	400.0	180.0	0.0
3. Mumbai Efficient Transport and Electricity Distribution Improvement Project	ENE	GI	IEG, ESG, GCD, KNS	SAEN		500.0	350.0	0.0	0.0	350.0	150.0	0.0
4. Odisha Power Sector Assistance Project	ENE	GI	ESG, IEG, GCD	SAEN	2016	286.0	200.0	0.0	0.0	200.0	86.0	0.0

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/ PDA	Cost (\$ million)						
						Total	ADB			Total	Gov't	Co-finance
							OCR	COL	ADF Grants			
5. Sillahalla Pumped Storage Project - Phase 1	ENE	GI	IEG, ESG, GCD	SAEN		430.0	300.0	0.0	0.0	300.0	130.0	0.0
6. Supporting National Urban Health Mission (additional financing)	HLT	GI	GEM, GCD, PSD, IEG	SAHS	2017	400.0	200.0	0.0	0.0	200.0	200.0	0.0
7. Mumbai Metro - Line 2A and 7 Investment Program (tranche 1)	TRA	GI	IEG, GEM	SATC		642.9	250.0	0.0	0.0	250.0	392.9	0.0
8. Mumbai Metro - Line 2B Investment Program (tranche 1)	TRA	GI	IEG, GEM	SATC		128.6	50.0	0.0	0.0	50.0	78.6	0.0
9. Railway Energy Efficiency Project	TRA	GI	IEG, ESG	SATC		140.0	70.0	0.0	0.0	70.0	70.0	0.0
10. Railway Sector Investment Program (tranche 3)	TRA	GI	IEG, ESG	SATC		240.0	120.0	0.0	0.0	120.0	120.0	0.0
11. Rajasthan State Highway Investment Program (tranche 2)	TRA	GI	IEG, GCD	SATC		400.0	280.0	0.0	0.0	280.0	120.0	0.0
12. SASEC Port Connectivity Investment Program (tranche 1)	TRA	GI	IEG, RCI	SATC	2011	286.0	200.0	0.0	0.0	200.0	86.0	0.0
13. SASEC Road Connectivity Investment Program (tranche 2)	TRA	GI	IEG, RCI	SATC		290.0	200.0	0.0	0.0	200.0	90.0	0.0
14. Assam Urban Infrastructure Development Investment Program (tranche 2)	WUS	TI-M	IEG, ESG, GEM, PSD, GCD	SAUW		173.8	139.0	0.0	0.0	139.0	34.8	0.0
15. Infrastructure Development Investment Program for Tourism (tranche 4)	WUS	GI	IEG, ESG, GEM, PSD, GCD	SAUW		56.0	39.2	0.0	0.0	39.2	16.8	0.0
16. Kolkata Environmental Improvement Investment Program (tranche 3)	WUS	TI-M	IEG, PSD, GCD, GEM, PAR	SAUW		142.9	100.0	0.0	0.0	100.0	42.9	0.0
17. Smart City Investment Program (tranche 1)	WUS	TI-M	IEG, ESG, GEM, PSD, GCD, KNS, PAR	SAUW		200.0	100.0	0.0	0.0	100.0	100.0	0.0

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/ PDA	Cost (\$ million)						
						Total	ADB			Gov't	Co-finance	
							OCR	COL	ADF Grants			Total
18. Visakhapatnam– Chennai Industrial Corridor Development Program (tranche 2)	TRA, WUS, ENE, IND	GI	IEG, ESG, GEM, RCI, PAR	SAUW		365.0	255.0	0.0	0.0	255.0	110.0	0.0
19. West Bengal Water Supply Improvement Project	WUS	TI-M	IEG, ESG, GEM, PSD, GCD, KNS, PAR	SAUW		580.0	400.0	0.0	0.0	400.0	180.0	0.0
Total (2018 Firm)						6011.2	3772.2	0.0	0.0	3772.2	2239.0	0.0
2018 Standby												
1. Gujarat Smart Grid Development Investment Project	ENE	GI	IEG, ESG, GCD	SAEN		360.0	250.0	0.0	0.0	250.0	110.0	0.0
2. Creating a Bond Guarantee Fund for India	FIN	GI	IEG, PSD	SAPF		870.0	435.0	0.0	0.0	435.0	435.0	0.0
3. Vadhavan Port Investment Program (tranche 1)	TRA	GI	IEG, RCI, PSD	SATC	2017	560.0	200.0	0.0	0.0	200.0	360.0	0.0
4. Tamil Nadu Urban (tranche 1)	WUS	TI-M	IEG, ESG, GEM, GCD, PAR	SAUW		360.0	250.0	0.0	0.0	250.0	110.0	0.0
Total (2018 Standby)						2,150.0	1,135.0	0.0	0.0	1,135.0	1,015.0	0.0
2019 Firm												
1. Construction of Rain Water Harvesting Structure and Construction of Small Ponds/Jalkunds in Meghalaya	ANR	TI-G	IEG, GEM, GCD, KNS	SAER		182.5	146.0	0.0	0.0	146.0	36.5	0.0
2. Madhya Pradesh Irrigation Efficiency Improvement Project (additional financing)	ANR	TI-G	IEG, ESG, GEM, PSD, GCD	SAER		165.0	115.5	0.0	0.0	115.5	49.5	0.0
3. Skills Development Project in Selected States I	EDU	GI	IEG, GEM, PSD, GCD	SAHS	2018	150.0	100.0	0.0	0.0	100.0	50.0	0.0
4. Andhra Pradesh Power Sector Project	ENE	GI	IEG, ESG, KNS	SAEN	2018	430.0	300.0	0.0	0.0	300.0	130.0	0.0

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/ PDA	Cost (\$ million)						
						Total	ADB			Gov't	Co-finance	
							OCR	COL	ADF Grants			Total
5. Gujarat Smart Grid Development Investment Project	ENE	GI	IEG, ESG, GCD	SAEN		360.0	250.0	0.0	0.0	250.0	110.0	0.0
6. Creating a Bond Guarantee Fund for India	FIN	GI	IEG, PSD	SAPF		870.0	435.0	0.0	0.0	435.0	435.0	0.0
7. Jaipur Metro Line 2 Investment Program (tranche 1)	TRA	GI	IEG, ESG, GEM, PSD	SATC	2017	500.0	250.0	0.0	0.0	250.0	250.0	0.0
8. Jharkhand State Roads III Project	TRA	GI	IEG	SATC	2017	428.0	300.0	0.0	0.0	300.0	128.0	0.0
9. SASEC Roads II Investment Program (tranche 1)	TRA	GI	IEG, RCI	SATC	2016	288.5	200.0	0.0	0.0	200.0	88.5	0.0
10. VadHAVAN Port Investment Program (tranche 1)	TRA	GI	IEG, RCI, PSD	SATC	2017	560.0	200.0	0.0	0.0	200.0	360.0	0.0
11. Delhi Water Supply Improvement Investment Program (tranche 2)	WUS	TI-M	IEG, ESG, GEM, PSD, GCD	SAUW		207.1	145.0	0.0	0.0	145.0	62.1	0.0
12. Madhya Pradesh Urban Services Improvement Project (additional financing)	WUS	TI-M	IEG, ESG, GEM, PSD	SAUW		440.0	308.0	0.0	0.0	308.0	132.0	0.0
13. Tamil Nadu Urban (tranche 1)	WUS	TI-M	IEG, ESG, GEM, GCD, PAR	SAUW		360.0	250.0	0.0	0.0	250.0	110.0	0.0
14. West Bengal Urban Development Program	WUS	TI-M	IEG, ESG, GEM, PSD, GCD, KNS, PAR	SAUW	2019	720.0	500.0	0.0	0.0	500.0	220.0	0.0
Total (2019 Firm)						5,661.1	3,499.5	0.0	0.0	3,499.5	2,161.6	0.0
2019 Standby												
1. Tamil-Nadu Transmission Project	ENE	GI	IEG, ESG, KNS	SAEN	2018	430.0	300.0	0.0	0.0	300.0	130.0	0.0
2. West Bengal Solar Park and Transmission Project	ENE	GI	IEG, ESG, KNS	SAEN	2017	580.0	400.0	0.0	0.0	400.0	180.0	0.0
3. Colachel Port Investment Program (tranche 1)	TRA	GI	IEG, RCI, PSD	SATC	2017	375.0	150.0	0.0	0.0	150.0	225.0	0.0

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/ PDA	Cost (\$ million)						
						ADB					Gov't	Co-finance
						Total	OCR	COL	ADF Grants	Total		
4. Uttarakhand State Highways Investment Project	TRA	GI	IEG	SATC		306.3	245.0	0.0	0.0	245.0	61.3	0.0
5. Rajasthan Urban Sector Project IV	WUS	TI-M	IEG, ESG, GEM, PSD, KNS	SAUW	2019	720.0	500.0	0.0	0.0	500.0	220.0	0.0
Total (2019 Standby)						2,411.3	1,595.0	0.0	0.0	1,595.0	816.3	0.0

ADB = Asian Development Bank; ADF = Asian Development Fund; ANR = agriculture, natural resources, and rural development; COL = concessional OCR lending; EDU = education; ENE = energy; ESG = environmentally sustainable growth; FIN = finance; GCD = governance and capacity development; GEM = gender equity and mainstreaming; GI = general intervention; Gov't = government; HLT = health; IEG = inclusive economic growth; IND = industry and trade; KNS = knowledge solutions; OCR = ordinary capital resources; PAR = partnerships; PDA = project design advance; PPTA = project preparatory technical assistance; PSD = private sector development; PSM = public sector management; RCI = regional integration; SAEN = South Asia Energy Division; SAER = South Asia Environment Natural Resources and Agriculture Division; SAHS = South Asia Human and Social Development Division; SAPF = South Asia Public Management, Financial Sector and Trade Division; SASEC = South Asia Subregional Economic Cooperation; SATC = South Asia Transport and Communications Division; SAUW = South Asia Urban Development and Water Division; TI-G = targeted intervention—geographic dimensions of inclusive growth; TI-M = targeted intervention—Millennium Development Goals; TRA = transport; WUS = water and other urban infrastructure and services.

Source: ADB estimates.

Table A2.2: Indicative Multitranche Financing Facilities, 2017–2019

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/PDA	Cost (\$ million)						
						ADB					Gov't	Co-finance
						Total	OCR	COL	ADF Grants	Total		
2017 Firm												
1. Interstate Natural Gas Pipeline	ENE	GI	IEG, ESG	SAEN	2016	1,071.4	750.0	0.0	0.0	750.0	321.4	0.0
2. Rajasthan State Highways Investment Program	TRA	GI	IEG, ESG, GCD, PSD	SATC		1,415.0	500.0	0.0	0.0	500.0	915.0	0.0
3. Second Rural Connectivity Investment Program	TRA	GI	IEG, ESG, GEM	SATC	2014	500.0	250.0	0.0	0.0	250.0	250.0	0.0
4. Delhi Water Supply Improvement Investment Program	WUS	TI-M	IEG, ESG, GEM, PSD, GCD	SAUW	2013	414.3	290.0	0.0	0.0	290.0	124.3	0.0
Total (2017 Firm)						3,400.7	1,790.0	0.0	0.0	1,790.0	1,610.7	0.0
2017 Standby												
1. SASEC Port Connectivity Investment Program	TRA	GI	IEG, RCI	SATC	2011	715.0	500.0	0.0	0.0	500.0	215.0	0.0
2. Smart City Investment Program	WUS	TI-M	IEG, ESG, GEM, PSD, GCD, KNS, PAR	SAUW		1,000.0	500.0	0.0	0.0	500.0	500.0	0.0
Total (2017 Standby)						1,715.0	1,000.0	0.0	0.0	1,000.0	715.0	0.0
2018 Firm												
1. Mumbai Metro - Line 2A and 7 Investment Program	TRA	GI	IEG, GEM	SATC		1,992.9	775.0	0.0	0.0	775.0	1,217.9	0.0
2. Mumbai Metro - Line 2B Investment Program	TRA	GI	IEG, GEM	SATC		1,607.1	625.0	0.0	0.0	625.0	982.1	0.0
3. SASEC Port Connectivity Investment Program	TRA	GI	IEG, RCI	SATC	2011	715.0	500.0	0.0	0.0	500.0	215.0	0.0
4. Smart City Investment Program	WUS	TI-M	IEG, ESG, GEM, PSD, GCD, KNS, PAR	SAUW		1,000.0	500.0	0.0	0.0	500.0	500.0	0.0
Total (2018 Firm)						5,315.0	2,400.0	0.0	0.0	2,400.0	2,915.0	0.0

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/PDA	Cost (\$ million)						
						ADB				Gov't	Co-finance	
						Total	OCR	COL	ADF Grants			Total
2018 Standby												
1. Tamil Nadu Urban	WUS	TI-M	IEG, ESG, GEM, GCD, PAR	SAUW		714.3	500.0	0.0	0.0	500.0	214.3	0.0
Total (2018 Standby)						714.3	500.0	0.0	0.0	500.0	214.3	0.0
2019 Firm												
1. Jaipur Metro Line 2	TRA	GI	IEG, ESG, GEM, PSD	SATC	2017	2,000.0	1,000.0	0.0	0.0	1,000.0	1,000.0	0.0
2. SASEC Roads II Investment Program	TRA	GI	IEG, RCI	SATC	2016	750.0	520.0	0.0	0.0	520.0	230.0	0.0
3. Vadhavan Port Investment Program	TRA	GI	IEG, RCI, PSD	SATC	2017	1,400.0	500.0	0.0	0.0	500.0	900.0	0.0
4. Tamil Nadu Urban	WUS	TI-M	IEG, ESG, GEM, GCD, PAR	SAUW		714.3	500.0	0.0	0.0	500.0	214.3	0.0
Total (2019 Firm)						4,864.3	2,520.0	0.0	0.0	2,520.0	2,344.3	0.0
2019 Standby												
1. Colachel Port Investment Program	TRA	GI	IEG, RCI, PSD	SATC	2017	1,000.0	400.0	0.0	0.0	400.0	600.0	0.0
Total (2019 Standby)						1,000.0	400.0	0.0	0.0	400.0	600.0	0.0

ADB = Asian Development Bank; ADF = Asian Development Fund; COL = concessional OCR lending; ENE = energy; ESG = environmentally sustainable growth; GCD = governance and capacity development; GEM = gender equity and mainstreaming; GI = general intervention; Gov't = government; IEG = inclusive economic growth; KNS = knowledge solutions; OCR = ordinary capital resources; PAR = partnerships; PDA = project design advance; PPTA = project preparatory technical assistance; PSD = private sector development; RCI = regional integration; SAEN = South Asia Energy Division; SASEC = South Asia Subregional Economic Cooperation; SATC = South Asia Transport and Communications Division; SAUW = South Asia Urban Development and Water Division; TI-M = targeted intervention—Millennium Development Goals; TRA = transport; WUS = water and other urban infrastructure and services
Source: ADB estimates.

Table A2.3: Indicative Nonlending Products and Services, 2017–2019

Assistance Name	Sector	Division	Assistance Type	Sources of Funding				Total (\$'000)
				ADB		Others		
				Source	Amount (\$'000)	Source	Amount (\$'000)	
2017								
1. Supporting Odisha Skills Development	EDU	SAHS	CDTA		0	TBD	2,000	2,000
2. Preparing the Maharashtra Feeder Separation and HVDS Sector Project	ENE	SAEN	PPTA	TASF	225		0	225
3. Preparing the Odisha Power Sector Project	ENE	SAEN	PPTA	TASF	225		0	225
4. Preparing the Sillahalla Pumped Storage Hydro-Electric Project	ENE	SAEN	PPTA	TASF	225		0	225
5. Preparing the West Bengal Solar Park and Transmission Project	ENE	SAEN	PPTA	TASF	225		0	225
6. Preparing the Supporting National Urban Health Mission Project (additional financing)	HLT	SAHS	PPTA	TASF	500		0	500
7. Capacity Development for West Bengal Development Finance Program II	PSM	SAPF	CDTA	TASF	500		0	500
8. Jaipur Metro II	TRA	SATC	PPTA	TASF	500		0	500
9. Jharkhand State Roads III	TRA	SATC	PPTA	TASF	500		0	500
10. Preparing Transport Sector Projects I	TRA	SATC	PPTA	TASF	1,000		0	1,000
11. Preparing SASEC Roads II Investment Program	TRA	SATC	PPTA	TASF	500		0	500
12. Capacity building of Delhi Jal Board	TRA	SATC	CDTA	TASF	500		0	500
13. Capacity building of Madhya Pradesh Urban	TRA	SATC	CDTA	TASF	1,000		0	1,000
14. Preparing the Rajasthan Urban Sector Project IV	WUS	SAUW	PPTA	TASF	750		0	750
15. Strengthening Climate Change Resilience in Urban India, Supporting PPPs for Climate Friendly Smart City Projects, and Other Support for Building Urban Resilience in the National Flagship Programs	WUS	SAUW	CDTA		0	UCCRTF	2,500	2,500
Total (2017)					6,650		4,500	11,150
2018								
1. Supporting Skill Development in Selected States	EDU	SAHS	PPTA	TASF	700		0	700
2. Preparing the Andhra Pradesh Power Sector Project	ENE	SAEN	PPTA	TASF	500		0	500
3. Preparing State Energy Project	ENE	SAEN	PPTA	TASF	1,000		0	1,000

Assistance Name	Sector	Division	Assistance Type	Sources of Funding				Total (\$'000)
				ADB		Others		
				Source	Amount (\$'000)	Source	Amount (\$'000)	
4. Preparing the Tamil Nadu Transmission Project	ENE	SAEN	PPTA	TASF	225		0	225
5. State Level Feeder Separation Project	ENE	SAEN	PPTA	TASF	350		0	350
6. Supporting Urban Poor Primary Health Care	HLT	SAHS	CDTA		0	TBD	2,000	2,000
7. Knowledge Management for Inclusive Growth II	MUL	INRM	PATA	TASF	1,000		0	1,000
8. Preparing Transport Sector Projects II	TRA	SATC	PPTA	TASF	1,000		0	1,000
9. Capacity building for West Bengal Urban Development Program	WUS	SAUW	CDTA	TASF	1,000		0	1,000
Total (2018)					5,775		2,000	7,775
2019								
1. Preparing the New Feeder Separation Project	ENE	SAEN	PPTA	TASF	500		0	500
2. State Level 24x7 Power Project	ENE	SAEN	PPTA	TASF	350		0	350
3. Supporting Urban Health in Selected States	HLT	SAHS	PPTA	TASF	1,000		0	1,000
4. Capacity Building for State Roads	TRA	SATC	CDTA	TASF	1,000		0	1,000
5. Preparing State Roads Project	TRA	SATC	PPTA	TASF	1,000		0	1,000
6. Capacity Building for Rajasthan Urban Infrastructure Development Project IV	WUS	SAUW	CDTA	TASF	500		0	500
7. Tamil Nadu Urban Development Project	WUS	SAUW	CDTA	TASF	1000		0	1,000
Total (2019)					5,350		0	5,350

ADB = Asian Development Bank, CDTA = capacity development technical assistance, EDU = education, ENE = energy, HLT = health, HVDS = High Voltage Distribution System, INRM = India Resident Mission, MUL = multisector, PATA = policy and advisory technical assistance, PPTA = project preparatory technical assistance, PSM = public sector management, SAEN = South Asia Energy Division, SAHS= South Asia Human and Social Development Division, SAPF = South Asia Public Management Financial Sector and Trade Division, SASEC = South Asia Subregional Economic Cooperation, SATC = South Asia Transport and Communications Division, SAUW = South Asia Urban Development and Water Division, TASF = Technical Assistance Special Fund, TBD = to be determined, TRA = transport, UCCRTF = urban climate change resilience trust fund, WUS = water and other urban infrastructure and services.

Source: ADB estimates.

ASSISTANCE PROGRAM FOR CURRENT YEAR

Table A3.1: Lending Products, 2016

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/PDA	Cost (\$ million)						
						Total	OCR	ADB		Total	Gov't	Co-finance
								Loans	Grants			
2016 Firm												
1. Climate Adaptation in Vennar Sub-Basin in Cauvery Delta Project	ANR	TI-G	IEG, ESG, GCD	SAER	2012	144.0	100.0	0.0	0.0	100.0	44.0	0.0
2. Demand-Side Energy Efficiency Investment Project	ENE	GI	IEG, ESG, GCD, KNS, PAR	SAEN	2016	414.4	200.0	0.0	0.0	200.0	200.0	14.4
3. Rajasthan Renewable Energy Transmission Investment Program (tranche 2)	ENE	GI	IEG, ESG, PSD, GEM, PAR	SAEN		418.0	238.0	0.0	0.0	238.0	70.0	110.0
4. Solar Rooftop Investment Program (tranche 1)	FIN	GI	IEG, ESG, PSD, GCD, KNS, PAR	SAPF		200.0	0.0	0.0	0.0	0.0	100.0	100.0
5. Bihar New Ganga Bridge Project	TRA	GI	IEG, ESG, GCD, PSD, RCI	SATC		715.0	500.0	0.0	0.0	500.0	215.0	0.0
6. Madhya Pradesh District Roads II Sector Project	TRA	GI	IEG, ESG, PSD	SATC		500.0	350.0	0.0	0.0	350.0	150.0	0.0
7. Uttar Pradesh Major District Roads Improvement Project	TRA	GI	IEG, ESG, PSD	SATC	2013	428.0	300.0	0.0	0.0	300.0	128.0	0.0
8. Visakhapatnam–Chennai Industrial Corridor Development Program (tranche 1)	TRA, WUS, ENE, IND	GI	IEG, ESG, RCI, GCD, PSD, PAR, GEM	SAUW	2015	358.0	245.0	0.0	0.0	245.0	108.0	5.0
9. Visakhapatnam–Chennai Industrial Corridor Sector Development Program (program loan)	TRA, WUS, ENE, IND	GI	IEG, ESG, RCI, GCD, PSD, PAR, GEM	SAUW	2015	125.0	125.0	0.0	0.0	125.0	0.0	0.0

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/PDA	Cost (\$ million)						
						Total	ADB				Gov't	Co-finance
							OCR	ADF		Total		
							Loans	Grants				
10. Kolkata Environmental Improvement Program Investment Program (tranche 2)	WUS	TI-M	IEG, ESG, GEM, GCD, PAR	SAUW		286.0	200.0	0.0	0.0	200.0	86.0	0.0
Total (2016 Firm)						3,588.4	2,258.0	0.0	0.0	2,258.0	1,101.0	229.4
2016 Standby												
1. Sustainable Coastal Protection and Management Improvement (tranche 2)	ANR	GI	IEG, ESG, PSD, KNS	SAER		93.6	65.5	0.0	0.0	65.5	28.1	0.0
2. Solar Transmission Sector Project	ENE	GI	IEG, ESG, GCD, KNS, PAR	SAEN	2015	450.0	175.0	0.0	0.0	175.0	225.0	50.0
Total (2016 Standby)						543.6	240.5	0.0	0.0	240.5	253.1	50.0

ADB = Asian Development Bank; ADF = Asian Development Fund; ANR = agriculture, natural resources, and rural development; COL = concessional OCR lending; ENE = energy; ESG = environmentally sustainable growth; FIN = finance; GCD = governance and capacity development; GEM = gender equity and mainstreaming; GI = general intervention; Gov't = government; IEG = inclusive economic growth; IND = industry and trade; KNS = knowledge solutions; OCR = ordinary capital resources; PAR = partnerships; PDA = project design advance; PPTA = project preparatory technical assistance; PSD = private sector development; RCI = regional integration; SAEN = South Asia Energy Division; SAER = South Asia Environment Natural Resources and Agriculture Division; SAPF = South Asia Public Management Financial Sector and Trade Division; SATC = South Asia Transport and Communications Division; SAUW = South Asia Urban Development and Water Division; TI-G = targeted intervention—geographic dimensions of inclusive growth; TI-M = targeted intervention—Millennium Development Goals; TRA = transport; WUS = water and other urban infrastructure and services.

Source: ADB estimates.

Table A3.2: Multitranche Financing Facilities, 2016

Project/Program Name	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of PPTA/PDA	Cost (\$ million)						
						Total	OCR	ADB		Total	Gov't	Co-finance
								Loans	Grants			
2016 Firm												
1. Solar Rooftop Investment Program	FIN	GI	IEG, ESG, PSD, GCD, KNS, PAR	SAPF		1,000.0	330.0	0.0	0.0	330.0	500.0	170.0
2. Visakhapatnam–Chennai Industrial Corridor Development Program	TRA, WUS, ENE, IND	GI	IEG, ESG, RCI, GCD, PSD, PAR, GEM	SAUW	2015	720.0	500.0	0.0	0.0	500.0	215.0	5.0
Total (2016 Firm)						1,720.0	830.0	0.0	0.0	830.0	715.0	175.0

ADB = Asian Development Bank; ADF = Asian Development Fund; ENE = energy; ESG = environmentally sustainable growth; FIN = finance; GCD = governance and capacity development; GEM = gender equity and mainstreaming; GI = general intervention; Gov't = government; IEG = inclusive economic growth; IND = industry and trade; KNS = knowledge solutions; OCR = ordinary capital resources; PAR = partnerships; PDA = project design advance; PPTA = project preparatory technical assistance; PSD = private sector development; RCI = regional integration; SAPF = South Asia Public Management Financial Sector and Trade Division; SAUW = South Asia Urban Development and Water Division; TRA = transport; WUS = water and other urban infrastructure and services
Source: ADB estimates.

Table A3.3: Nonlending Products and Services, 2016

Assistance Name	Sector	Division	Assistance Type	Sources of Funding				
				ADB		Others		Total (\$'000)
				Source	Amount (\$'000)	Source	Amount (\$'000)	
1. Preparing the Madhya Pradesh Skills Development Project	EDU	SAHS	PPTA	TASF	225		0	225
2. Supporting Skill Development In Himachal Pradesh (Supplementary to TA 9060-IND)	EDU	SAHS	PPTA	TASF	225		0	225
3. Demand-Side Energy Efficiency Investment Project	ENE	SAEN	PPTA		0	CEF-CEFPF/GEF	1,150	1,150
4. Interstate Natural Gas Pipeline Investment Program	ENE	SAEN	PPTA	TASF	225		0	225
5. Madhya Pradesh Power Transmission	ENE	SAEN	PPTA	TASF	225		0	225
6. Maharashtra Feeder Separation and High Voltage Distribution System	ENE	SAEN	PPTA	TASF	225		0	225
7. Preparing Assam Power Transmission Project	ENE	SAEN	PPTA	TASF	225		0	225
8. Preparing Odisha Transmission Project	ENE	SAEN	PPTA	TASF	225		0	225
9. Capacity Building for Solar Rooftop Investment Program	FIN	SAPF	CDTA		0	CTF	2,000	2,000
10. Capacity Development for Project Implementation (Supplementary to TA 7593-IND)	MUL	INRM	CDTA	TASF	750		0	750
11. Capacity Development for Industrial Corridor Development Program in Andhra Pradesh	MUL	SAUW	CDTA	TASF	1,000		0	1,000
12. Strengthening Climate Change Resilience in Urban India, Supporting Climate and Disaster-Resilient Smart Urban Infrastructure in West Bengal	MUL	SAUW	CDTA		0	UCCRTF	1,000	1,000
13. Strengthening Climate Change Resilience in Urban India, Strengthening Smart Water Management and Urban Climate Change Resilience in Tamil Nadu	MUL	SAUW	CDTA		0	UCCRTF	1,500	1,500
14. Strengthening Bridge Operation and Management Project	TRA	SATC	PPTA	TASF	900		0	900
15. State-Level Support for National Flagship Urban Programs (Supplementary TA: 9022-IND)	WUS	SAUW	CDTA	TASF	1,500		0	1,500

Assistance Name	Sector	Division	Assistance Type	Sources of Funding				Total (\$'000)
				ADB		Others		
				Source	Amount (\$'000)	Source	Amount (\$'000)	
16. Strengthening Climate Resilience of Kolkata through Improved Planning, Flood and Disaster Management	WUS	SAUW	CDTA		0	UCCRTF	1,000	1,000
Total					5,725		6,650	12,375

ADB = Asian Development Bank, CDTA = capacity development technical assistance, CEF = clean energy fund, CEFPPF = clean energy financing partnership facility, CTF = clean technology fund, EDU = education, ENE = energy, FIN = finance, GEF = global environmental facility, INRM = India Resident Mission, MUL = multisector, PPTA = project preparatory technical assistance, SAEN = South Asia Energy Division, SAHS = South Asia Human and Social Development Division, SAPF = South Asia Public Management Financial Sector and Trade Division, SATC = South Asia Transport and Communications Division, SAUW = South Asia Urban Development and Water Division, TA = technical assistance, TASF = Technical Assistance Special Fund, TRA = transport, UCCRTF = urban climate change resilience trust fund, WUS = water and other urban infrastructure and services.

Source: ADB estimates.

INDICATIVE KNOWLEDGE PUBLICATIONS AND EVENTS

Table A4.1: Knowledge Publications and Events for 2017

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
Sustainable Urban Mobility for Pune	Transport	WP	SARD	Admin Core Budget (staff work)
SASEC 2025: Vision Document (third quarter of 2017)	Regional cooperation and integration	Report	SARD	TA
Vizag–Chennai Industrial Corridor: Master Plan	Economics, finance, industry and trade, urban development	Report	SARD	TA 8254-REG: Enhancing Economic Analysis and South–South Learning
Rajasthan Productive Cluster Development	Industry and trade	Report	SARD	TA
Developing the Tamil Nadu Economic Corridor (CDP+RPP)	Knowledge management, industry and trade, transport, urban development	Report	SARD	...
The Economic Effects of Participating in Global Value Chains: Country and Sector Level Analysis	Capacity development, economics, governance and public sector management	Report	ERCD	TA 8779-REG: Key Indicators for Asia and the Pacific 2016
Asia Water Futures and Solutions	Water	Report	SDCC	TA 6498-REG: Knowledge and Innovation Support for ADB's Water Financing Program
Asia Water Week 2017	Water	Event	SDCC	TA 6498-REG: Knowledge and Innovation Support for ADB's Water Financing Program
Total number of publications: Eight				

ADB = Asian Development Bank, CDP = conceptual development plan, ERCD = Economic Research and Regional Cooperation Department, RPP = regional perspective plan, SARD = South Asia Department, SASEC = South Asia Subregional Economic Cooperation, SDCC = Sustainable Development and Climate Change Department, TA = technical assistance, WP = working paper.

Source: ADB estimates.

Table A4.2: Additional Knowledge Publications and Events Delivered in 2016

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
Assessment of Power Sector Reforms in South Asia	Energy	WP	SARD	Admin Core Budget (staff work)
Feasibility and Desirability of Establishing a Project Completion Risk Guarantee Facility for India	Finance	WP	SARD	TA
SASEC 2025: Operational Plan (fourth quarter of 2016)	Regional cooperation and Integration	Report	SARD	TA
Cross-Border Electricity Generation, Transmission and Trading: A Vision for South Asia	Energy	WP	SARD	...
Vizag–Chennai Industrial Corridor: Regional Perspective Plan	Economics, finance, industry and trade, urban development	Report	SARD	TA 8254-REG: Enhancing Economic Analysis and South–South Learning
Analysis of Rajasthan's productive clusters	Industry and trade	Report	SARD	TA
Compendium of SUT for Asia: Benchmark Supply and Use Tables for Selected Economies in Asia and the Pacific	Economics, capacity development, governance and public sector management	Report	ERCD	TA 8838-REG: Updating and Constructing the Supply and Use Tables for Selected Developing Member Economies
Final Report and Stakeholder Dissemination Workshop on Monetization of Infrastructure Assets in India	Finance	Report	SAPF	TA 8876-IND: Enabling Monetization of Infrastructure Assets in India
Scaling New Heights: Vizag–Chennai Industrial Corridor, India's First Coastal Corridor	Economics, finance, industry and trade, urban development	Book	SARD	TA 8254-REG: Enhancing Economic Analysis and South–South Learning
Asian Water Development Outlook 2016	Water	Report	SDCC	TA 6498-REG: Knowledge and Innovation Support for ADB's Water Financing Program
Total number of publications: 10				

ADB = Asian Development Bank, ERCD = Economic Research and Regional Cooperation Department, SAPF = South Asia Public Management, Financial Sector and Trade Division, SARD = South Asia Department, SASEC= South Asia Subregional Economic Cooperation, SDCC = Sustainable Development and Climate Change Department, SUT = sustainable urban transport, TA = technical assistance, WP = working paper.

Source: ADB estimates.

Table A4.3: Innovation, Advanced Technology, and Pilot Initiatives to be Implemented in 2017

Item	Nature	Project Number	Sector or Theme	Division
Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (use of flood and erosion protection technologies)	INO	...	ANR	SAER
Madhya Pradesh Skills Development Project (to establish a global vocational skills park)	TCH	...	EDU	SAHS
Karnataka State Highways Improvement III Project (use of hybrid annuity contracts for PPP)	INO	42513	TRA	SATC
Railway Energy Efficiency Project (introducing auxiliary power units and pilot common-rail electronic direct injection to locomotives to improve fuel efficiency)	INO	...	TRA	SATC
Second Rural Connectivity Investment Program (results-based lending)	PLT	...	TRA	SATC
West Bengal Water Supply Improvement Project (to pilot small-scale waste-to-energy plants through anaerobic biodigestion and explore landfill methane capture)	TCH	...	WUS	SAUW
Total number of innovation, advanced technology, and pilot initiatives: six				

ANR = agriculture, natural resources, EDU = Education, INO = innovation, PLT = pilot initiative, PPP = public-private partnership, SAER = South Asia Environment Natural Resources and Agriculture Division, SAHS = South Asia Human and Social Development Division, SATC = South Asia Transport and Communications Division, SAUW = South Asia Urban Development and Water Division, TCH = advanced technology, TRA = transport, WUS = water and other urban infrastructure and services.

Source: Asian Development Bank estimates.