



Country Operations Business Plan

September 2017

Bhutan
2018–2020

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

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 29 August 2017)

Currency unit	–	ngultrum (Nu)
Nu1.00	=	\$0.0156727529
\$1.00	=	Nu63.8050

ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
COBP	–	country operations business plan
COL	–	concessional ordinary capital resources lending
DRR	–	disaster risk reduction
OCR	–	ordinary capital resources
TA	–	technical assistance

NOTES

- (i) The fiscal year (FY) of the Government of Bhutan ends on 30 June. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2017 ends on 30 June 2017.
- (ii) In this report, “\$” refers to United States dollars.

Vice-President	W. Zhang, Operations 1
Director General	H. Kim, South Asia Department (SARD)
Director	K. Lao-Araya, Country Director, Bhutan Resident Mission, SARD
Team leader	T. Norbu, Senior Country Coordination Officer, SARD
Team members	Bhutan Country Team

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I. CONSISTENCY OF BUSINESS PLAN WITH COUNTRY PARTNERSHIP STRATEGY

1. The proposed lending and nonlending operations are aligned with the country partnership strategy (CPS) of the Asian Development Bank (ADB) for Bhutan for 2014–2018,¹ and with the priority areas of the Government of Bhutan as articulated in the Eleventh Five-Year Plan.² Technical assistance (TA) grants will support capacity development and project preparation. This COBP also included proposed education and health projects, consistent with the priorities set out in ADB's Midterm Review of Strategy 2020 to expand operations in these key social sectors.³ These projects support the national objective of self-reliance and inclusive socioeconomic development (footnote 2), which places importance to economic diversification for creating employment opportunities, ensuring a broader tax base and providing an enabling environment for private sector development.

II. INDICATIVE RESOURCE PARAMETERS

2. Bhutan, a group A developing member country, is eligible for Asian Development Fund (ADF) grants and concessional ordinary capital resources lending (COL). The indicative ADF grant and COL resource allocation available for commitment during 2018–2020 amount to \$171.28 million, including \$13.33 million from the regional health security set-aside allocated for a 2018 health project and \$12.54 million from disaster risk reduction (DRR) resources. The final allocation will depend on available resources and the outcome of the country performance assessments. Cofinancing and funding from other sources, including the regional pool under concessional resources, will be explored.⁴ Based on the debt sustainability analysis of the International Monetary Fund in 2016, debt distress classification for Bhutan was rated as being at moderate risk. In accordance with the ADF grants framework, the country is to receive 50% of its country allocation in grants in 2017, subject to a 20% volume discount on the grant portion of the country allocation. As a transitional arrangement during the ADF 12 period,⁵ Bhutan will become ineligible for grants in 2019 instead of in 2017.

3. Total ADB financing for the proposed lending pipeline for 2018–2020 is estimated at \$348.46 million, which will be sourced from ADF grants, DRR, COL as well as regular ordinary capital resources (OCR) and subregional COL set-aside.⁶ External cofinancing and the use of ADB-administered trust funds will be actively explored in consultation with the government. Total ADB financing for the proposed non-lending pipeline for 2018–2020 is estimated at \$6.25 million, of which \$3.75 million will be allocated from the Technical Assistance Special Fund and \$2.50 million will come from other sources, including the Japan Fund for Poverty Reduction. The final amount of assistance is subject to the resource availability and project readiness. In addition, nonsovereign investments from ADB's Private Sector Operations Department can be explored for bankable projects in agribusiness, tourism, finance, and infrastructure projects.

4. The country assistance results areas in Appendix 1 align sectors of ADB assistance over 2018–2020 with the cross-sector strategic agenda, provide directions regarding the allocation of

¹ ADB. 2014. *Country Partnership Strategy: Bhutan, 2014–2018*. Manila.

² Government of Bhutan, Gross National Happiness Commission. 2013. *Eleventh Five-Year Plan, 2013–2018*, Volume I: Main Document. Thimphu.

³ ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

⁴ Funds from the regional pool under concessional resources and OCR regional set-aside are envisaged for projects that include regional cooperation and integration components.

⁵ ADF 12 refers to the 11th replenishment of the Asian Development Fund, covering from 2017 to 2020.

⁶ Financing from regular OCR is proposed for high-revenue-earning projects that generate net foreign exchange earnings exceeding the foreign debt service requirement (ADB. 2014. *Performance-Based Allocation of Asian Development Fund Resources. Operations Manual*. OM A3/BP. Manila). Funding from DRR resources will support incremental costs in strengthening the disaster resilience of infrastructure investments.

sectoral resources, and detail changes from the last COBP. The indicative pipeline of lending and nonlending products for 2018–2020 (Appendix 2) reflects a balanced program in accordance with the priority sectors of CPS: (i) energy, (ii) finance, (iii) transport, and (iv) water and other urban infrastructure and services. The assistance program for both lending and nonlending products for the current year is in Appendix 3. Appendix 4 provides the list of indicative knowledge products, which seek to respond to Bhutan’s priority knowledge needs.

III. SUMMARY OF CHANGES TO LENDING AND NONLENDING PROGRAMS

5. **Lending products.** Proposed changes to the COBP 2017–2019 that are reflected in the COBP 2018–2020 are as follows:

- (i) The Secondary Towns Urban Development Project is rescheduled from 2017 to 2018, and the amount reduced from \$20 million to \$10 million due to readiness requirements;
- (ii) The Housing Finance Program (using the sector development program lending modality [\$17 million]) is newly programmed for 2018, and the Financial Market Development Program (using sector development program lending [\$20 million]) is newly programmed for 2019;
- (iii) The South Asia Subregional Economic Cooperation Green Power Investment Program is rescheduled as follows: tranche 1 from 2018 to 2019 (\$120 million), tranche 2 from 2018 to 2020 (\$100 million), and tranche 3 from 2019 to 2020 standby (\$100 million);
- (iv) The Integrated Irrigated Agriculture Development Project with \$26.46 million in ADB financing is rescheduled from 2019 to 2020; and
- (v) The Amochhu Land Development and Township Project Phase 2 is renamed to the Amochhu Land Development and Township Project (Additional Financing) and rescheduled from 2019 to 2020 standby to meet the project readiness requirements.

6. **Nonlending products.** Proposed changes to the COBP 2017–2019 that are reflected in the COBP 2018–2020 are as follows:

- (i) The transaction TA (TRTA) for the preparation of the Integrated Irrigated Agriculture Development Project is rescheduled from 2017 to 2018 to align with the ensuing project’s processing schedule;
- (ii) The TRTA to prepare the Financial Market Development Program (\$250,000 from the Technical Assistance Special Fund) is added in 2018;
- (iii) The TRTA for capacity development under the South Asia Subregional Economic Cooperation Green Power Investment Program is rescheduled from 2018 to 2019;
- (iv) The TRTA to prepare Amochhu Land Development and Township Project, Additional Financing is included in 2019; and
- (v) The knowledge and support TA (KSTA) entitled Promoting Private Sector Development and Entrepreneurship is programmed for 2020.

COUNTRY ASSISTANCE RESULTS AREAS

Key Country Development Outcomes that ADB Contributes to	ADB		
	Key Areas of Assistance	Indicative Resource Allocation in 2018–2020 ^a	Changes from Last COBP
1. Energy			
Energy security and the energy sector's contribution to revenue, economic growth, employment, and climate change mitigation increased.	<p>Hydropower production and transmission</p> <p>Cross-border power trade and sustained access for rural inhabitants to domestic electricity from diversified sources such as solar, wind, and biogas</p> <p>Energy sector development and institutional reform, including cross-border power trade and support for public–private partnerships</p>	<p>Amount: \$40.56 million (COL PBA), \$116.63 million (regular OCR), \$10.00 million (regional pool grant), \$36.39 million (regional pool COL), and \$80.00 million (cofinancing)^b</p> <p>Share of COBP envelope: 26.1%</p>	The three tranches of the SASEC Green Power Investment Programs have been deferred from 2018–2019 to 2019–2020.
2. Transport			
Access to safe, reliable, affordable, and convenient transport services increased, promoting regional connectivity and enhancing economic efficiency.	<p>Road and air transport</p> <p>Multimodal logistics for border services improvement</p>	<p>Amount: \$20.00 million (COL PBA)</p> <p>Share of COBP envelope: 12.9%</p>	No change.
3. Water and Other Urban Infrastructure and Services			
Quality of urban infrastructure and services improved through the enhanced safety, reliability, and quality of urban services.	<p>Urban water supply, sanitation, and flood management</p> <p>Urban policy, institutional and capacity development for secondary towns</p>	<p>Amount: \$10.00 million (COL PBA)</p> <p>Share of COBP envelope: 6.4%</p>	One project has been deferred from 2017 to 2018, and the amount reduced from \$20 million to \$10 million.
4. Finance			
Diversification of sources of growth ensured, and private sector development fostered.	<p>Housing finance</p> <p>Finance sector development</p>	<p>Amount: \$37.00 million (COL PBA)</p> <p>Share of COBP envelope: 23.8%</p>	Two projects added.
5. Education			
Education sector developed holistically to improve education quality, and the skills base of the labor force improved steadily.	<p>Technical and vocational education through improved curricula, infrastructure, and facilities of selected technical and training institutes</p> <p>Career counseling in mainstream primary education</p>	<p>Amount: \$15.00 million (ADF grant PBA)</p> <p>Share of COBP envelope: 9.6%</p>	No change.
6. Health			
Quality and efficiency of health services improved.	<p>Health system development to improve primary health care</p> <p>Health care finance and health sector reform</p>	<p>Amount: \$6.67 million (ADF grant PBA) plus \$13.30 million (regional health security grant)</p> <p>Share of COBP envelope: 4.3%</p>	No change.

Key Country Development Outcomes that ADB Contributes to	ADB		
	Key Areas of Assistance	Indicative Resource Allocation in 2018–2020 ^a	Changes from Last COBP
7. Agriculture, Natural Resources, and Rural Development			
Irrigation modernized and climate-smart agriculture production promoted.	<p>Modernized irrigation and enhanced, climate-smart agricultural production</p> <p>Rural irrigation and flood protection</p> <p>Rural water policy, institutional and capacity development</p>	<p>Amount: \$26.46 million (\$20.00 million [COL PBA] and \$6.50 million [ADF grant PBA])</p> <p>Share of COBP envelope: 17.0%</p>	<p>One project has been deferred from 2019 to 2020.</p> <p>One project has been shifted from 2019 firm to 2020 standby.</p>

ADB = Asian Development Bank, ADF = Asian Development Fund, COBP = country operations business plan, COL = concessional OCR lending, OCR = ordinary capital resources, PBA = performance-based allocation.

^a The term “resources” covers \$127.56 million in COL (country allocation), \$116.63 million in regular OCR lending, \$52.81 million in COL from the regional pool, a \$10.00 million ADF grant from the regional pool, a \$21.67 million ADF grant (country allocation), a \$6.46 million ADF grant from the disaster risk reduction fund, and a \$13.33 million regional health security grant. The indicated figures presented in the table refer to allocations for firm projects only.

^b Financing from regular OCR is proposed for high-revenue-earning projects that generate net foreign exchange earnings exceeding the foreign debt service.

Source: ADB estimates.

INDICATIVE ASSISTANCE PIPELINE

Table A2.1: Lending Products, 2018–2020

Project/Program Name ^a	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of TRTA/ PDA	Cost (\$ million)						
						Total	ADB			Gov't	Co- finance	
							Regular OCR	COL	ADF Grants			Total
2018 Firm												
Education and Skills Development Project	EDU	GI	IEG, GCD, GEM, KNS	SAHS	2017	18.00	0.00	0.00	15.00	15.00	3.00	0.00
Health System Strengthening Project ^b	HLT	GI	IEG, GCD, GEM, KNS	SAHS	2017	24.00	0.00	0.00	20.00	20.00	4.00	0.00
Secondary Towns Urban Development Project	WUS	GI	ESG, GEM, IEG	SAUW	2013	12.00	0.00	10.00	0.00	10.00	2.00	0.00
Housing Finance Program (SDP)	FIN	GI	IEG, ESG, GCD	SAPF	2017	20.00	0.00	17.00	0.00	17.00	3.00	0.00
Total						74.00	0.00	27.00	35.00	62.00	12.00	0.00
2019 Firm												
SASEC Green Power Investment Program (Tranche 1) ^c	ENE	GI	ESG, IEG, PSD, PAR, RCI	SAEN	2016	212.28	48.61	61.39	10.00	120.00	12.28	80.00
Financial Market Development Program (SDP)	FIN	GI	IEG, GCD, PSD	SAPF	2018	24.00	0.00	20.00	0.00	20.00	4.00	0.00
Total						236.28	48.61	81.39	10.00	140.00	16.28	80.00
2019 Standby												
SASEC Green Power Investment Program (Tranche 2) ^d	ENE	GI	ESG, IEG, PSD, RCI	SAEN	2016	117.42	68.02	31.98	0.00	100.00	17.42	0.00
SASEC Air Connectivity Project	TRA	GI	IEG, RCI	SATC		24.00	0.00	20.00	0.00	20.00	4.00	0.00
Integrated Irrigated Agriculture Development Project ^e	ANR	GI	ESG, IEG, GEM	SAER	2018	31.75	0.00	20.00	6.46	26.46	5.29	0.00
Total						173.17	68.02	71.98	6.46	146.46	26.71	0.00
2020 Firm												
SASEC Green Power Investment Program (Tranche 2) ^d	ENE	GI	ESG, IEG, PSD, PAR, RCI	SAEN	2016	117.42	68.02	31.98	0.00	100.00	17.42	0.00

Project/Program ^a Name ^a	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of TRTA/ PDA	Cost (\$ million)						
						ADB					Gov't	Co- finance
						Total	Regular OCR	COL	ADF Grants	Total		
SASEC Air Connectivity Project	TRA	GI	IEG, GCD, RCI	SATC		24.00	0.00	20.00	0.00	20.00	4.00	0.00
Integrated Irrigated Agriculture Development Project ^e	ANR	GI	ESG, IEG, GEM, GCD	SAER	2018	31.75	0.00	20.00	6.46	26.46	5.29	0.00
Total						173.17	68.02	71.98	6.46	146.46	26.71	0.00
2020 Standby												
SASEC Green Power Investment Program (Tranche 3) ^f	ENE	GI	ESG, IEG, PSD, PAR, RCI	SAEN	2016	400.00	67.33	32.67	0.00	100.00	100.00	200.00
Amochhu Land Development and Township Project (Additional Financing)	ANR, WUS	TI-G	ESG, IEG, GCD, PSD	SAER	2019	95.00	60.00	0.00	0.00	60.00	35.00	0.00
Secondary Towns Urban Development Project (Additional Financing)	WUS	GI	ESG, GCD, GEM, IEG	SAUW	2013	25.00	0.00	20.00	0.00	20.00	5.00	0.00
Total						520.00	127.33	52.67	0.00	180.00	140.00	200.00

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; KNS = knowledge solutions; OCR = ordinary capital resources; PAR = partnerships; PDA = project design advance; PSD = private sector development; 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 Communication Division; SAUW = South Asia Urban Development and Water Division; SDP = sector development program; TI-G = targeted intervention—geographic dimensions of inclusive growth; TRA = transport; TRTA = transaction technical assistance; WUS = water supply and other urban infrastructure and services.

Note: Per Strategy, Review and Policy Department's (SPD) memo of 10 March 2017, the project/program pipeline is prepared based on the expected year of signing.

^a Given the provisional nature of the indicative lending program (including ADF grants), the composition of lending instruments in the actual loan delivery may change.

^b Project financing is proposed to be from an ADF grant (\$6.67 million) and regional health security set-aside (\$13.33 million).

^c Project financing is proposed to be from COL PBA (\$25.00 million); COL RCI (\$36.39 million, including \$10.00 million from the concessional regional pool) a \$10.00 million grant from the concessional regional pool; and regular OCR (\$48.61 million). Cofinancing sources include the European Investment Bank, Japan International Cooperation Agency, and local and commercial financial institutions. Government project sponsors for the first stage of the Nyera Amari hydropower plant project include the Druk Green Power Corporation and other public and private sponsors in the project special-purpose company. The total multitranches financing facility (MFF) amounts to \$320 million.

^d Project financing is proposed to be from COL PBA (\$15.56 million), COL RCI (\$16.42 million), and regular OCR (\$68.02 million). Government project sponsors for the strengthening of the eastern grid include the Bhutan Power Corporation. Total MFF amounts to \$320 million.

^e A \$6.46 million ADF grant is from disaster risk reduction operations, including a \$3.23 million grant for 2019 and a \$3.23 million grant for 2020.

^f Project financing is proposed to be from regular OCR (\$67.33 million) and COL (\$32.67 million). Cofinanciers include the European Investment Bank, Japan International Cooperation Agency, and local and commercial financial institutions. Government project sponsors for the second stage of the Nyera Amari hydropower plant project include the Druk Green Power Corporation and other public and private sponsors in the project special-purpose company. Total MFF amounts to \$320 million.

Source: ADB estimates.

Table A2.2: Nonlending Products and Services, 2018–2020

Assistance Name	Sector	Division	Assistance Type	Sources of Funding				Total (\$'000)
				ADB		Others		
				Source	Amount (\$'000)	Source	Amount (\$'000)	
2018								
Integrated Irrigated Agriculture Development Project	ANR	SAER	TRTA	TASF	500	TBD	1,000	1,500
Capacity Building for Education and Skills Development	EDU	SAHS	TRTA	TASF	500	TBD	500	1000
Capacity Building for Health System Strengthening	HLT	SAHS	TRTA	TASF	500	TBD	500	1000
Financial Market Development Program	FIN	SAPF	TRTA	TASF	250		0	250
Total					1,750		2,000	3,750
2019								
Capacity Building for SASEC Green Power Investment Program	ENE	SAEN	TRTA		500	TBD	500	1,000
Amochhu Land Development and Township Project, Additional Financing	ANR/ WUS	SAUW/ SAER	TRTA	TASF	250		0	250
SASEC Air Connectivity Project	TRA	SATC	TRTA	TASF	500		0	500
Total					1,250		500	1,750
2020 Firm								
Promoting Private Sector Development and Entrepreneurship	IND/PSM	BHRM	KSTA	TASF	750		0	750
Total					750		0	750

ADB = Asian Development Bank; ANR = agriculture, natural resources, and rural development; BHRM = Bhutan Resident Mission; EDU = education; ENE = energy; FIN = finance; HLT = health; IND = industry and trade; KSTA = knowledge and support technical assistance; PSM = public sector management; 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 Communication Division; SAUW = South Asia Urban Development and Water Division; TASF = Technical Assistance Special Fund; TBD = to be determined; TRA = transport; TRTA = transaction technical assistance; WUS = water and other urban infrastructure and services.

Note: Per SPD's memo of 10 March 2017, the project/program pipeline is prepared based on the expected year of signing.

Source: ADB estimates.

ASSISTANCE PROGRAM FOR CURRENT YEAR

Table A3.1: Lending Products, 2017

Project/Program Name ^a	Sector	Poverty Targeting	Strategic Agendas and Drivers of Change	Division	Year of TRTA/ PDA	Cost (\$ million)						
						ADB					Gov't	Co- finance
						Total	Regular OCR	COL	ADF Grants	Total		
Firm												
Amochhu Land Development and Township Project ^b	ANR, WUS	TI-G	ESG, IEG	SAER	2016	63.0	0.0	28.74	24.26	53.0	10.0	0.0
Total						63.0	0.0	28.74	24.26	53.0	10.0	0.0

ADB = Asian Development Bank; ADF = Asian Development Fund; ANR = agriculture, natural resources, and rural development; COL = concessional OCR lending; Gov't = government; ESG = environmentally sustainable growth; IEG = inclusive economic growth; OCR = ordinary capital resources; PDA = project design advance, SAER = South Asia Environment, Natural Resources, and Agriculture Division; TI-G = targeted intervention—geographic dimensions of inclusive growth; TRTA = transaction technical assistance; WUS = water and other urban infrastructure and services.

Note: Per SPD's memo of 10 March 2017, the project/program pipeline is prepared based on the expected year of signing.

^a Given the provisional nature of the indicative lending program, the composition of the lending instruments actually delivered may change. Investment lending accounted for 84.59% of sovereign lending commitments in the 3-year period of 2014-2016, while conventional PBL was 15.41%.

^b Project financing is proposed to be from COL (\$22.67 million), an ADF grant (\$18.19 million), and the 2017–2018 biennial allocation for Bhutan from disaster risk reduction (a \$6.07 million ADF grant plus \$6.07 million in COL).

Source: ADB.

Table A3.2: Nonlending Products and Services, 2017

Assistance Name	Sector	Division	Assistance Type	Sources of Funding				
				ADB		Others		Total (\$'000)
				Source	Amount (\$'000)	Source	Amount (\$'000)	
Health System Strengthening Project	HLT	SAHS	TRTA	TASF	500		0	500
Enhancing Development Management for Sustainable and Inclusive Growth (Supplementary)	PSM	BHRM	KSTA	TASF	500		0	500
Education and Skills Development Project (Supplementary)	EDU	SAHS	TRTA	TASF	200		0	200
Total					1,200		0	1,200

ADB = Asian Development Bank, BHRM = Bhutan Resident Mission, EDU = education, HLT = health, KSTA = knowledge and support technical assistance, PSM = public sector management, SAHS = South Asia Human and Social Development Division, TASF = Technical Assistance Special Fund, TRTA = transaction technical assistance.

Note: Per SPD's memo of 10 March 2017, the project/program pipeline is prepared based on the expected year of signing.
Source: ADB.

INDICATIVE KNOWLEDGE PUBLICATIONS AND EVENTS

Table A4.1: Knowledge Publications and Events for 2018

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
Asian Development Bank and Bhutan: Fact Sheet 2017	ADB administration and governance	Publication and documentation: technical study	DER	Administrative Core Budget (Staff)
Evolution of the Economies of Selected DMCs: A Study Based on Input–Output Economic Analysis Framework—Part 2	Capacity development, economics, governance and public sector management	Publication and documentation: technical study	ERCD	TA 8838
The Economic Effects of Participating in Global Value Chains: Country and Sector Level Analysis	Capacity development, economics, governance and public sector management	Publication and documentation: technical study	ERCD	TA 8779
Asian Development Outlook 2018	Capacity development, economics, governance and public sector management	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Asian Development Outlook 2018 Supplements (July and December)	Governance and public sector management, economics, capacity development	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Asian Development Outlook 2018 Update	Capacity development, economics, governance and public sector management	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Asian Economic Integration Report 2018	Industry and trade, governance and public sector management, regional cooperation and integration, finance, capacity development	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Key Indicators for Asia and the Pacific 2018	Capacity development, economics, governance and public sector management	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
Key Indicators for Asia and the Pacific 2018 Special Report	Capacity development, economics, governance and public sector management	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
2016 Purchasing Power Parity Update for Selected Economies in Asia and the Pacific	Capacity development, governance and public sector management	Publication and documentation: technical study	ERCD	TA 9238
Road Safety Guideline	Transport	Publication and documentation: technical study	SARD	Administrative Core Budget (Staff)
Financial Sector Development in Bhutan	Finance	Publication and documentation: working paper	SARD	TA 7997
ADB's Contribution to Urban Development in South Asia: Two-Decades Journey	Water, urban development	Publication and documentation: flagship study	SARD	Administrative Core Budget (Staff)
Regulation and Regulatory Risks in Bhutan: Using New Institutional Economics Perspectives	Economics	Publication and documentation: working paper	SARD	TA 7997
South-South Learning	Knowledge management	Publication and documentation: technical study	SARD	TA 7997
Study on Land Pooling in Thimphu	Urban development	Publication and documentation: technical study	SARD	Administrative Core Budget (Staff), TA 9050
Urban Health in South Asia	Health, urban development	Publication and documentation: flagship study	SDCC	Administrative Core Budget (Staff)
Asia Water Futures and Solutions	Water	Publication and documentation: Technical study	SDCC	TA 6498
Subregional Conference on Strategies for Smart, Safe and Equitable Cities in South Asia	Gender, urban development	Event organization	SARD	TA 8311
Asia Clean Energy Forum 2018	Energy, environment, finance, regional cooperation and integration	Flagship event	SDCC	TA 8953, Trust Fund, Initiative Partner
Asia Solar Energy Forum 12th Meeting	Capacity development, climate change, energy, environment, finance	Flagship event	SDCC	TA 8953

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
Asia Water Forum 2018	Water	Flagship event	SDCC	TA 6498
Judicial Training Program on Environmental Laws	Capacity development, legal, environment	Flagship event	OGC	TA 9279
Total number of publications = 18				
Total number of events = 5				

ADB = Asian Development Bank, DER = Department of External Relations, DMC = developing member country, ERCD = Economic Research and Regional Cooperation Department, OGC = Office of the General Counsel, op-ed = opinion editorial, SARD = South Asia Department, SDCC = Sustainable Development and Climate Change Department, TA = technical assistance.

Note: "Publications" may include databases, multimedia, and other forms of documentation. "Events" may include event organization and training or capacity development.

Source: ADB Knowledge Nexus.

Table A4.2: Additional Knowledge Publications and Events Delivered in 2017

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
ADB Working Paper Series No. 736: Growth Slowdowns, Middle-Income Trap, and Demographic Profile in South Asia	Economics	Publication and documentation: working paper	ADB	Administrative Core Budget (Staff)
ADB Working Paper Series No. 692: External Debt Sustainability and Vulnerabilities: Evidence from a Panel of 24 Asian Countries and Prospective Analysis	Economics	Publication and documentation: working paper	ADB	Administrative Core Budget (Staff)
ADB Annual Report 2016	ADB administration and governance	Publication and documentation: flagship study	DER	Administrative Core Budget (Staff)
Asian Development Bank and Bhutan: Fact Sheet 2016	ADB administration and governance	Publication and documentation: awareness-raising brochure	DER	Administrative Core Budget (Staff)
Banking on the Future of Asia and the Pacific: 50 Years of the Asian Development Bank	ADB administration and governance	Publication and documentation: technical study	DER, SPD	Administrative Core Budget (Staff), Administrative Core Budget (Consultant/s)
Guidelines for Developing and Improving Statistical Business Registers	Economics, capacity development, governance and public sector management	Publication and documentation: technical study	ERCD	TA 8594
Measuring Infrastructure Investment in Asia and the Pacific	Economics	Publication and documentation: working paper	ERCD	Administrative Core Budget (Staff)
Evolution of the Economies of Selected DMCs: A Study Based on Input–Output Economic Analysis Framework—Part 1	Capacity development, economics, governance and public sector management	Publication and documentation: technical study	ERCD	TA 8838
Using Fused Satellite Data to Identify Paddy Rice Field and Estimate Crop Yields: A Case Study in Thai Binh, Viet Nam	Agriculture and natural resources, governance and public sector management	Publication and documentation: working paper	ERCD	TA 8369
Compendium of SUTs for Asia: Benchmark Supply and Use Tables for Selected Economies in Asia and the Pacific	Economics, capacity development, governance and public sector management	Publication and documentation: technical study	ERCD	TA 8838

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
Asian Development Outlook 2017: Transcending the Middle-Income Challenge	Capacity development, economics, governance and public sector management	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Asian Development Outlook 2017 Supplement (July and December)	Governance and public sector management, economics, capacity development	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Asian Development Outlook 2017 Update	Capacity development, economics, governance and public sector management	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Asian Economic Integration Report 2017	Industry and trade, governance and public sector management, regional cooperation and integration, finance, capacity development	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Key Indicators for Asia and the Pacific 2017	Capacity development, economics, governance and public sector management	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Key Indicators for Asia and the Pacific 2017 Special Report on Meeting Asia's Infrastructure Needs	Capacity development, economics, governance and public sector management	Publication and documentation: flagship study	ERCD	Administrative Core Budget (Staff)
Integrating South and East Asia: Economics of Regional Cooperation and Development	Economics, regional cooperation and integration	Publication and documentation: technical study	ERCD	TA 7791, Administrative Core Budget (Staff)
Lessons from ADB Transport Projects: Moving Goods, Connecting People, and Disseminating Knowledge	Regional cooperation and integration, transport	Publication and documentation: technical study	ERCD, SARD	TA 8392, Administrative Core Budget (Staff)
Poverty Purchasing Power Parities	Economics	Publication and documentation: working paper	ERCD	TA 7507
Second Knowledge Product on Priority Legal and Regulatory Issues in South Asia	Governance and public sector management, regional cooperation and integration, capacity development	Publication and documentation: technical study	OGC	TA 8801

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
South Asia Subregional Economic Cooperation Vision: Powering Asia in the 21st Century	Regional cooperation and integration	Publication and documentation: technical study	SARD	Administrative Core Budget (Staff)
Bhutan: New Pathways to Growth	Economics, finance, industry and trade	Publication and documentation: technical study	SARD	TA 8229
Assessment of Power Sector Reforms in South Asia	Energy	Publication and documentation: working paper	SARD	TA 7997
Cross-Border Power Generation, Transmission, and Trading—A Way Forward for South Asia	Energy	Publication and documentation: working paper	SARD	TA 7997
Next Steps to South Asian Economic Union	Regional cooperation and integration	Publication and documentation: technical study	SARD	TA 7997
Post-COP 21: A Bright New Future for Clean Energy Development in Bhutan and Nepal	Energy	Publication and documentation: technical study	SARD	Administrative Core Budget (Staff)
Biodiversity Baseline and Impact Assessment: Phipsoo Wildlife Sanctuary	Environment, governance and public sector management	Publication and documentation: technical study	SARD	Administrative Core Budget (Staff)
Design of Roads in Biodiversity-Rich Areas	Environment, safeguard, transport	Publication and documentation: technical study	SARD	Administrative Core Budget (Staff)
Deployment of Hybrid Renewable Energy Systems in Minigrids	Energy	Publication and documentation: technical study	SARD	TA 7485
SASEC 15-Year Anniversary Coffee Table	Regional cooperation and integration	Publication and documentation: technical study	SARD	TA 7997
Transport and Trade Facilitation Monitoring Mechanism Baseline Study in Bhutan	Industry and trade	Publication and documentation: technical study	SARD	TA 7997
BIMSTEC Connectivity	Economics	Publication and documentation: policy paper	SARD	TBD
Updating and Enhancement of the BIMSTEC Transport and Logistics Study Final Report	Transport	Publication and documentation: technical study	SARD	TA 8009

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
Progress Report (2015–2016) of the MDB Working Group on Sustainable Transport	Transport, climate change	Publication and documentation: technical study	SDCC	TA 7997
Writershop: Compendium of SUTs in Asia and the Pacific	Capacity development	Capacity development event for DMCs	ERCD	TA 8838
Second Conference on the Development of Supply and Use Tables in Asia and the Pacific	Capacity development	Capacity development event for DMCs	ERCD	TA 8838
2017 International Comparison Program for Asia and the Pacific: First Meeting for the Regional Advisory Board	Capacity development	Capacity development event for DMCs	ERCD	TA 9238
Inception Meeting for National Implementing Agencies	Capacity development	Capacity development event for DMCs	ERCD	TA 9238
Training on Time Series/Annual SUT Updating/Estimation	Capacity development	Capacity development event for DMCs	ERCD	TA 8838
Regional Hub Training on Economic Analysis for the DMCs (South Asia)	Economics, capacity development	Event organization	ERCD, SARD	TA 9249
Mid-Term Workshop on Financial Vulnerability Assessment	Capacity development, economics, finance, regional cooperation and integration	Capacity development event for DMCs	ERCD	TA 9077, Administrative Core Budget (Staff)
Country Assessment and Training Workshop on Financial Vulnerability Assessment	Economics, capacity development, finance, regional cooperation and integration	Capacity development event for DMCs	ERCD	TA 8966, Administrative Core Budget (Staff)
Country Experience on Financial Vulnerability Assessment: Sharing of Experience	Capacity development, economics, finance, regional cooperation and integration	Capacity development event for DMCs	ERCD	TA 9077, Administrative Core Budget (Staff)
Regional Technical Evaluation and Training Workshop on the 2015–2016 PPP Update for International Comparison Program	Capacity development	Event organization	ERCD	TA 7507
Regional Workshop on ADB-SBR Systems	Capacity development	Capacity development event for DMCs	ERCD	TA 8594
ADB-OMFIF Joint Conference on “Developing Financial Market to Support Financial Stability”	Finance, regional cooperation and integration	Flagship event	ERCD	TA 9024
SASEC Finance Ministers’ Meeting	Regional cooperation and integration	Event organization	SARD	TA 9231
Sixth SASEC Customs Subgroup Meeting	Industry and trade, regional cooperation and integration	Event organization	SARD	TA 9231

Title of Publication or Event	Subject	Type	Department or Sector Group or Thematic Group	Technical Assistance
SASEC Trade Facilitation and Transport Working Group Meeting	Regional cooperation and integration, transport	Event organization	SARD	TA 7491
Country Experience on Financial Vulnerability Assessment: Sharing of Experience	Capacity development, economics, finance, regional cooperation and integration	Capacity development event for DMCs	SARD	TA 9077, Administrative Core Budget (Staff)
Training Workshop on Macroeconometrics	Economics	Capacity development event for DMCs	SARD	TA 8254
Tariff Appraisal Study: Balancing Sustainability and Efficiency with Inclusive Access	Energy, gender and social inclusion	Event organization	SARD	TA 8311
Smart Grid Technologies and Implications for Inclusive Development: Lateral Learning Program (Melbourne School of Engineering)	Energy, gender and social inclusion	Event organization	SARD	TA 8311
Moving Towards Strategic Purchasing for Health in Asia: Second Bi-Regional Health Financing Policy Workshop, New Delhi	Health	Event organization	SDCC	TA 8983
Total number of publications = 34 Total number of events = 20				

ADB = Asian Development Bank, ADBI = Asian Development Bank Institute, BIMSTEC = Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, COP = Conference of the Parties, DER = Department of External Relations, DMC = developing member country, ERCD = Economic Research and Regional Cooperation Department, MDB = multilateral development bank, OGC = Office of General Counsel, OMFIF = Official Monetary and Financial Institutions Forum, PPP = public-private partnership, SARD = South Asia Department, SASEC = South Asia Subregional Economic Cooperation, SBR = sequencing batch reactor, SDCC = Sustainable Development and Climate Change Department, SPD = Strategy and Policy Department, SUT = supply and use table, TA = technical assistance, TBD = to be determined.

Note: "Publications" may include databases, multimedia, and other forms of documentation. "Events" may include event organization and training or capacity development. The table includes additional knowledge publications and events delivered outside the list of indicative knowledge publications and events included in the 2017 country operations business plan.

Source: ADB Knowledge Nexus.

Table A4.3: Innovation, Advanced Technology, and Pilot Initiatives to be Implemented in 2018

Item	Nature	Project Number	Sector or Theme	Division
Introduction of mortgage guarantee instruments	INO	51252-001 (Housing Finance Program)	FIN	SAPF
ICT application in customs collection and interface with the Revenue Administration Management Information System in Bhutan	INO	G0492-BHU	IND, RCI	SAPF, SARC, SATC
ICT application for the development of a national single window system in Bhutan	PLT	TA 8437-BHU	IND, RCI	SAPF, SARC, SATC
Total number of innovation, advanced technology, and pilot initiatives = 3				

BHU = Bhutan; FIN = finance; ICT = information and communication technology; IND = industry and trade; INO = innovation; PLT = pilot initiative; RCI = regional integration; SAPF = South Asia Public Management, Financial Sector, and Trade Division; SARC = South Asia Regional Cooperation and Operations Coordination Division; SATC = South Asia Transport and Communication Division; TA = technical assistance.

Source: Asian Development Bank project documents.