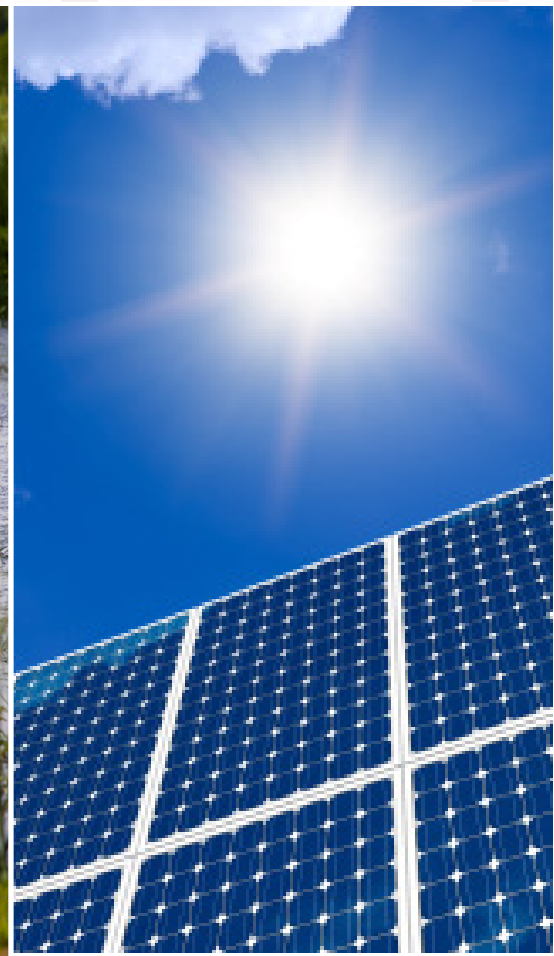


Topical Paper

Environmentally Sustainable Growth: A Strategic Review



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Evaluation 

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April 2016

Environmentally Sustainable Growth: A Strategic Review

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NOTE

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Abbreviations

ADB	– Asian Development Bank
ADF	– Asian Development Fund
AIIB	– Asian Infrastructure Investment Bank
ANR	– agriculture and natural resources
CEP	– Core Environment Programme
CO ₂	– carbon dioxide
CPS	– country partnership strategy
EOD	– Environment Operational Directions 2013-2020
EMP	– environmental management plan
GCF	– Green Climate Fund
GDP	– gross domestic product
GHG	– greenhouse gas
GEF	– Global Environment Facility
GMS	– Greater Mekong Subregion
IED	– Independent Evaluation Department
MDB	– multilateral development bank
NDB BRICS	– New Development Bank BRICS
OECD	– Organisation for Economic Co-operation and Development
OCR	– ordinary capital resources
PCS	– project classification system
PPER	– project performance evaluation report
PRC	– People’s Republic of China
PVR	– project completion report validation report
RRP	– report and recommendation of the President
SDG	– Sustainable Development Goal
SDCC	– Sustainable Development and Climate Change Department
SEA	– Strategic environmental assessments
STAR	– Sustainable Transport Appraisal Rating
TA	– technical assistance
UNEP	– United Nations Environment Programme
VRE	– variable renewable energy
WUS	– water and other urban infrastructure and services
WWF	– World Wide Fund for Nature

Contents

	Page
Acknowledgements	v
Executive Summary	vi
Views from External Experts	xiv
Chapter 1: Introduction	1
A. Rationale	1
B. Environmentally Sustainable Growth: Context and Challenges	2
C. Objective and Methodology	6
D. Organization of the Report	6
Chapter 2: The Environmentally Sustainable Growth Agenda	7
A. ADB Policies and Strategies	7
B. Key Institutional Responses Supporting Environmentally Sustainable Growth	11
Chapter 3: Country Strategies and Portfolio Trends	14
A. Country Partnership Strategies	14
B. Comparing the Country Partnership Strategies for the People's Republic of China and India	15
C. Portfolio Trends and Tagging of Projects	17
D. Proposed Environmentally Sustainable Growth Framework	21
E. Developments in Four Sector Programs	23
F. Tracking Climate Change Mitigation and Adaptation Support	30
G. Environmental Governance and Capacity	32
H. Environmentally Sustainable Growth Project Ratings	33
Chapter 4: Moving the Agenda Forward	35
Appendixes	
1. Principal Environmental Challenges in the Asia and Pacific Region Identified in Key ADB Policy and Strategy Documents	41
2. Principal Environmental Actions in the Asia and Pacific Region Identified in Key ADB Policy and Strategy Documents, 2002–2013	42
3. How Do Multilateral Institutions Define Environmentally Sustainable Growth?	43
4. Staff Perceptions of Guidance and Operationalization of Environmentally Sustainable Growth in ADB	45
5. ADB Partnerships on Environment and Climate Change, (2000-Mid-2015)	47
6. Knowledge Products Related to the Environment and Climate Change, 2012–2015	51
7. List of Randomly Selected Reports and Recommendations of the President Reviewed	57
8. ADB Investment Projects for Climate Change Mitigation and Adaptation, 2014	63
9. Evaluation Lessons from Projects Tagged as Environmentally Sustainable Growth	65

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We dedicate this paper to energy specialist Allan Poole who passed away during its preparation, but whose inquisitive mind, kind personality, and novel ideas on variable renewable energy have inspired us all.

IED remains fully responsible for the report.

Executive Summary

The Asian Development Bank's (ADB's) long-term strategic framework issued in 2008, Strategy 2020, identified environmentally sustainable growth (ESG) as one of ADB's three main strategic agendas. It also highlighted the environment as a core area of operations, while it paid special attention to three environmental areas: (i) climate change—mitigation and adaptation; (ii) livable cities; and (iii) “complementary actions,” including the mainstreaming of environmental considerations into country policies and investment programs, while strengthening the legal, regulatory, and enforcement capacities of public institutions.

This paper assesses ADB's response to this strategic agenda and raises issues for consideration in the ongoing discussions on the next corporate strategy of ADB, Strategy 2030. The paper focuses on the following key questions:

- (i) What are the major ESG challenges presently facing the Asia and Pacific region?
- (ii) Do ADB's strategies, sector policies, operational plans and directions provide sufficiently coherent guidance to enable ADB to support the right types of ESG operations?
- (iii) What are the trends in ADB's portfolio and do these signal a real and appropriate shift toward more support for ESG? Are the current guidelines for classifying ESG operations clear and justifiable, and do staff in operations follow them well and consistently?
- (iv) What has been the performance of ESG-tagged projects?
- (v) What recommendations can be made based on the findings of the paper?

Environmental Challenges in Asia and the Pacific

Rapid economic growth in Asia and the Pacific has significantly contributed to poverty reduction. All ADB member countries except Afghanistan and Nepal are projected to reach middle-income status by 2020. However, this progress has been achieved at the expense of widespread environmental degradation which, combined with the adverse effects of climate change, could severely disrupt and even reverse hard-won development gains. The poor are particularly vulnerable as many of them depend on a healthy natural environment for their livelihoods and on access to affordable and reliable food and clean water. Many poor people live in environmentally fragile locations in polluted cities and rural areas deprived of services.

The pressures on the environment in the region are pervasive and growing. Water stress, deforestation, biodiversity loss, depletion of natural resources, and degradation of ecosystems are all key issues in Asia and globally, while greenhouse gas (GHG) emissions have risen significantly because of a continued strong reliance on fossil fuels, especially coal, for electricity generation and on motor vehicles for transport. As the benefits and costs of Asia's economic growth manifest themselves most visibly in cities, addressing urban environmental issues and improving urban resilience is a key challenge. Urban air and water pollution are threatening people's health and productivity. With half of Asia's urban population living in low-lying coastal zones and floodplains, the risks associated with climate change, particularly more frequent and

intense floods, typhoons, storm surges, and over the longer term, sea level rise, loom large.

The recently adopted Sustainable Development Goals (SDGs) and Paris Agreement on climate change clearly recognize these challenges and present a framework for more holistic development together with policies and actions to promote low-carbon growth. If these agreements are taken seriously by the countries that subscribe to them, they offer considerable opportunities for ADB, whose overarching mission of poverty reduction and sector-based operations is fully consistent with the SDGs. ADB's long experience in energy and other key productive sectors and its close relationships with governments and other development partners in the region provide a solid entry point for supporting implementation of the intended nationally determined contributions that underlie the Paris Agreement and the achievement of the SDGs within the region.

The development finance landscape is also evolving. The Green Climate Fund, the Asian Infrastructure Investment Bank (AIIB), and the New Development Bank BRICS (NDB BRICS), established by Brazil, Russia, India, the People's Republic of China (PRC), and South Africa, all offer both challenges and opportunities for ADB. How ADB will engage with these new financing and cofinancing opportunities is yet to unfold.

ADB's Corporate Response to the Agenda

Strategy 2020 did not specify how the ESG agenda should influence sector programs. Attempts to do this were made in subsequent sector operational plans and other directional documents, notably the Energy Policy of 2009. Other documents also contributed to clarifying the agenda, notably the 2009 Safeguard Policy Statement and the 2013 Environment Operational Directions (EOD). ADB also furthered the ESG agenda through project classification changes, the introduction of volume targets for climate change operations, and partnerships with other organizations, and through the 2014 organizational changes.

Energy Policy. This promoted environmental sustainability as an objective and affirmed the need to work toward low-carbon development. It also discussed the use of coal and large hydropower. However, as it was adopted in 2009 and technology is changing rapidly, more up-to-date guidance is needed on how and under what conditions ADB will assist countries with coal-based power and large hydropower as part of country programs supporting the transition to a low carbon path.

Safeguard Policy Statement. This document updated ADB's earlier safeguard policies, including the 2002 Environment Policy, which had improved ADB's approach to environmental protection and provided a foundation for ADB's environmental work. Greatly expanded human resources have been dedicated to safeguard work since 2009. The Safeguard Policy Statement strengthened the policy principles and mandatory procedures to avoid or mitigate the negative environmental impacts of projects. In addition to mitigating risk, safeguard work can contribute to ESG when strategic environmental assessments and environmental management plans are undertaken and can lead to better project design. In support of safeguards, ADB provides technical assistance (TA) to strengthen country systems for environmental management.

Environment Operational Directions 2013–2020. This document elaborated on ADB's three environmental priority areas as set out in Strategy 2020, providing greater clarity and more comprehensive approach to the environment. In addition to sustainable

infrastructure, it gave greater attention to investments in natural capital and laid greater emphasis on environmental governance, together with stronger recognition of their role for ESG. It also re-emphasized the importance of climate change which cuts across the other priority areas. The EOD also complements other sector and thematic operational plans which incorporate environmental concerns. Unfortunately, EOD is a guidance document and not mandatory (unlike a Board-approved strategy or policy). Many ADB staff are unfamiliar with it.

Project classification system (PCS) changes. In 2014, ADB revised its 2009 project classification system to better align with the strategic agendas and drivers of change in Strategy 2020. For ESG, the 2014 classification maintained the same subthemes and added disaster risk management, a subtheme of social development in the 2009 PCS. ESG activities are then classified under one of the following subthemes: (i) natural resources conservation, (ii) urban environmental improvement, (iii) eco-efficiency, (iv) global and regional transboundary environmental concerns, (v) environmental policy and legislation, or (vi) disaster risk management.

Reorganization in response to climate change. Both Strategy 2020 and the EOD identified climate change as one of the foremost environmental sustainability concerns for the region. In response, in 2014, ADB reorganized the former Regional Sustainable Development Department to form the new Sustainable Development and Climate Change Department. Greater direction has been given to identifying ADB support for climate change mitigation and adaptation, while climate risk screening of all new projects and climate vulnerability risk assessment, as needed, has started.

Operational targets for environmental sustainability and climate change. Strategy 2020 envisaged 25% of operations addressing ESG by 2012 against a 14% baseline in 2006. The target was surpassed in 2010 and revised to 50% by 2016. This revised target was reached during 2012–2014. In 2012, ADB set a target of 60% of operations supporting climate change by 2016 (against a 2012 baseline of 39%). This target was adjusted to 45% in 2015. In 2015, ADB also committed to double ADB lending for climate change from \$2.8 billion in 2014 to \$6 billion by 2020. However, lending for climate change in recent years has been stagnant and has largely been focused on mitigation. If ADB is to reach this new and ambitious lending target, much greater emphasis on adaptation will be required.

Partnerships. ADB explicitly sought to promote partnerships particularly around themes such as natural capital where other organizations have a greater comparative advantage. Productive and enduring partnerships were built with a wide range of development agencies and organizations to more effectively address the many environmental challenges in the region. Partnerships such as with the Global Environment Facility and the Climate Investment Funds leveraged both funds and knowledge, and created synergies that are vital to enable ADB to deliver on its ESG agenda.

ADB's Response in Country Partnership Strategies and the Portfolio

ADB operational departments have made significant efforts to promote ESG through their country strategies. They paid considerable attention to ESG-related themes in their new operations, as was corroborated by IED's review of 16 recent country partnership strategies (CPSs) and their associated environmental assessment summaries. These documents also reflected ADB's rising awareness of the need to help strengthen the resilience of countries to natural hazards and to mitigate growing GHG emissions,

especially in the large countries that have access only to ADB's ordinary capital resources (OCR).

This paper reviewed the 2011–2015 CPS for the PRC and 2013–2017 CPS for India in detail to determine how these strategies are integrating environmental concerns. The PRC strategy, in particular, was found to be well-advanced in prioritizing and mainstreaming environmental concerns. In the energy sector, ADB-supported projects are being used to demonstrate cleaner technologies, while ADB also has a number of projects to improve the sustainability of the natural resource base and threatened ecosystems. The India strategy was more typical of how environmental concerns were addressed in other CPSs. Although the document recognized the importance of ESG, with a few notable exceptions, traditional infrastructure projects continue to predominate in ADB's proposed program. Environmental actions are most often incorporated as environmental co-benefits rather than as the main objective.

In 2015, ADB introduced reforms to the CPS process, which will integrate a number of previously stand-alone assessments, including the assessment of the environment, into one assessment on inclusive and sustainable growth. This process must not reduce the emphasis on environmental concerns.

ADB's growing prioritization of ESG is reflected in an increase in the share of projects in its portfolio classified as supporting ESG. Under the 2014 PCS, projects are to be tagged as supporting ESG if these involve a shift to low-carbon and climate-resilient development interventions, including infrastructure investments and preventing pollution, environmental degradation, biodiversity loss, and unsustainable resource use. The tagging is independent of the size of the support for ESG within the project. The result of the new classification and the new attention was a sharp increase in the proportion of loan and grant projects tagged as supporting ESG from less than 10% in 2004, 28% in 2008 to 57% of the portfolio in 2013–2015. ESG tagged projects are concentrated in four sectors: agriculture and natural resources (ANR); energy; transport; and water and other urban infrastructure and services (WUS).

ADB's TA operations supporting ESG have also grown significantly from 2009 onwards, matching the increase in ESG loan and grant portfolio. ESG tagged TA projects increased sharply from \$515 million (45% of TA operations) during 2004–2008 to \$1.1 billion (56%) in 2009–2014. TA projects have been instrumental in strengthening environmental governance capacity, supporting natural resource conservation and urban environmental improvement projects, and providing an important conduit for policy dialogue with countries. ADB has made a major effort for instance in improving environmental safeguards legislation and capacity development in many countries, over the years, with encouraging results in several countries.

ADB's public sector energy and transport portfolios have shown the largest increase in operations tagged as supporting ESG. The increase in ESG-tagged energy projects is largely due to a greater focus on efficiency gains and cleaner technologies, which is awarded with an ESG tag. A parallel increase has taken place in ADB's private sector energy operations, for the same reasons. Transport projects have increasingly been tagged as supporting ESG primarily because they now include climate risk assessments and climate-proofing of road projects, although these often imply only modest changes to the projects' design. There have also been innovative urban transport projects in recent years, but they have been relatively few. Interesting ESG initiatives in urban development have moved beyond the traditional focus on water supply and sanitation toward a more holistic approach to urban environmental challenges. ESG-tagged

projects in the ANR sector are still mostly infrastructure-related (e.g., irrigation), but there have been some noteworthy recent natural resource conservation and integrated area development projects.

A random sample of ESG projects showed that the extent and nature of actual environmental sustainability support vary greatly. The review was based on the premise that for a project to be considered to be truly supporting ESG, it should contain clear elements of environmental sustainability beyond environmental safeguard compliance. Most ESG-tagged projects did have environmental elements, although some of these were limited. In short, there are projects along a broad continuum from those involving only minor (in overall project cost terms) climate-proofing to projects with significant environmental objectives and/or components (e.g., reduced pollution). Most ESG-tagged projects are mainly oriented toward economic growth, with varying degrees of environmental co-benefits. There are few purely environmental projects.

The high proportion of operations tagged as ESG in recent years may have inadvertently overstated the increase in the environmental content of ADB operations. The reality is more nuanced as there were changes to the classification system that led to more projects being classified ESG and the extent and nature of ADB's ESG support varies significantly.

Even with these qualifications, there has been an increase in ADB's ESG support and there is evidence based on IED's review of project documents that 72% of the ESG portfolio is directly supporting the environment or providing environmental co-benefits through growth-oriented projects. However, in 28% of the ESG tagged portfolio, projects were considered to have marginal or negligible environmental benefits. The current ESG reporting system counts the entire project cost as contributing to ESG even when the environmental benefits are very small. Thus the increase in ADB support for ESG is not as substantial as it at first appears.

The paper proposes a more differentiated categorization of ESG operations into three pillars: (i) core environmental operations, (ii) economic growth-oriented operations with major environmental co-benefits, and (iii) economic growth-oriented operations with minor environmental co-benefits. The difference between major and minor co-benefits in growth projects would be determined either by the size of budget items dedicated to environmental actions, or by the size of environmental improvements derived from introducing new technologies or approaches compared to more traditional alternatives. Such a categorization would enable ADB to show better what added value it brings and would also allow it to set more specific environmental targets for future operations. The general aim would be the gradual pursuit of more core environmental operations and more growth operations with major environmental co-benefits. In the proposed ESG classification, operations that do not make a special effort to include positive environmental co-benefits but avoid or mitigate negative impacts (and have an environmental management plan) would not be tagged as supporting ESG, even if these address ADB's ESG agenda in some way.

The paper found that innovative core environmental operations have been undertaken across various sectors since Strategy 2020. These include interesting examples of wetland and lake rehabilitation in the PRC, support for biodiversity corridors in the Greater Mekong Subregion, as well as ADB's support for the Coral Triangle Initiative in the Pacific. These offer integrated approaches to protect critical natural resources and improve the livelihoods of local communities.

However, the number has been limited and if ADB is to scale up core environmental operations in biodiversity conservation and natural resource management, it will have to reengage in areas where it has been inactive, such as forestry and fisheries, as well as provide greater support for ecosystem service provision and ecological management on an integrated landscape basis. Such projects could also represent opportunities to combine greater investment in natural capital with climate change mitigation and adaptation like forest and mangrove protection.

There are challenges to consider in supporting core environmental operations and core growth projects with major environmental co-benefits. Countries may be reluctant to use OCR to fund primarily environmental activities since governments prefer to fund projects with more immediate economic returns. Also there may be capacity constraints both within governments and ADB. These projects often include innovative dimensions which require additional implementation support from ADB beyond standard time allotted for most projects.

To overcome these challenges for directly supporting environmental outcomes, TA have been used to build capacity and engage in policy dialogue on these issues. As with the Coral Triangle Initiative, the Greater Mekong Subregion, and the PRC examples, cofinancing and partnerships provide additional resources and technical support. Concessional finance is also necessary, even in middle income countries, to address public goods, maximize impacts and crowd-in the private sector particularly in interventions related to climate change.

ADB has a number of ongoing and new integrated urban development initiatives, which represent a more comprehensive and integrated multisectoral approach. These represent an evolution from ADB's traditional sector-specific focus to a more integrated and spatially oriented approach. This is a better fit with the way human and economic activity is organized and recognizes that environmental problems such as pollution and congestion are negative spatial externalities and that, in contrast, many environmental benefits are public goods at urban, rural, regional, national, and global levels. ADB's new sector and thematic groups can nurture this approach and provide opportunities for more systematic communication and collaboration across sectors. Given that these new integrated urban development initiatives are relatively recent, progress needs to be closely monitored so lessons can be learned and approaches replicated and scaled up.

To increase its focus on climate change, ADB will need to continue innovating and replicating its work in energy, evolve its transport work toward greater sustainability, and increase its adaptation work through rural and urban projects. If it does this, it will be able to advance ESG in Asia and the Pacific as many growth and climate change projects have major environmental co-benefits. The paper identified a number of technological developments in energy in recent years, meaning that ADB's support for clean coal-based power generation and hydropower development may have to be reconsidered, as ADB's Energy Policy has not been updated since it was issued in 2009.

Critical regional environmental issues that need more attention include urban air pollution, water scarcity, natural resource degradation, deforestation, and biodiversity loss. As ADB scales up its support for climate change mitigation and adaptation, it must not lose sight of the persisting and pressing need to assist the poor with these other key priorities for environmentally sustainable and inclusive growth (e.g., by strengthening environmental governance), and to ensure that it has the financial and human resources to do so effectively.

Performance of Operations Tagged as Supporting ESG

In the four predominant ESG sectors (ANR, Energy, Transport, WUS), higher evaluation success rates were found for ESG-tagged projects (77%) than those that were not tagged as ESG (61%). This was true for all sectors. This suggests that measures to improve environmental sustainability do not necessarily present more costs than benefits. The extra attention that multidimensional environmental projects sometimes receive in staff time and their greater appropriateness as a response to complex challenges may contribute to better outcomes overall.

ADB's response to its ESG agenda and the operational performance so far can be an entry point for establishing itself as the environmental sustainability bank for the region. The higher success rates for ESG projects and range of environmental projects including innovative ones across the four main ESG sectors provide a foundation to build upon. However, much work is needed to scale up and improve the environmental benefits of the ESG portfolio, address key challenges that have not received sufficient attention, and to mainstream environmental concerns into other areas more effectively. Greater knowledge sharing and strengthening of the sector and thematic groups will be necessary.

Moving the Environmentally Sustainable Growth Agenda Forward

For ADB to realize its potential as the environmental sustainability bank it should build on the examples and lessons highlighted in the paper. More effort will be needed to use the CPS as the framework to operationalize the SDGs and the Paris Agreement commitments in country contexts and to integrate more cross-sectoral and spatial approaches to support ESG. IED encourages ADB to shift to operations with more innovative and impactful environmental content. In the meantime, ADB is well advised to give more strategic direction on ESG. Focusing on this immediate need, the paper makes two primary recommendations for consideration to further the ESG agenda.

1. **Future ADB strategies and policies, in particular Strategy 2030, should further elaborate what ESG means and what its pursuit implies for ADB.** The development context is evolving and greater emphasis is being placed on environmental and climate change issues. ESG is a concept that aims to reconcile the need for enhancement and protection of the biophysical environment with the need for short- and long-term economic growth. While there will be win-win opportunities to support transformational projects where environmental and growth agendas converge (i.e., renewable energy), the accelerating degradation of the environment means that traditional growth-oriented projects and infrastructure operations need to be looked at more critically. More guidance on where to draw the line is needed. ADB needs to promote the ESG agenda and to devote resources to operations that go beyond environmental protection through safeguards to environmental enhancement and to improve its integration of climate change mitigation and adaptation.

ADB also needs to clarify the actions it will take in response to the SDGs and the Paris Agreement, and to integrate these into ADB strategy, processes and operations. The AIIB and NDB BRICS offer new opportunities but they will also require ADB to reflect on its comparative advantage with respect to the promotion of and support for ESG. In responding to these opportunities, ADB will need to provide additional directions to ADB staff that will guide and encourage innovation and mainstreaming of environmental co-benefits. Once

Strategy 2030 is approved, ADB may need to update the EOD and ESG subthemes in the PCS. ADB also needs to update, through a policy clarification or guidance note, its approach to the region's use of coal-fired power plants and hydropower.

2. Better categorization and targets for ESG operations are needed as ADB's environment agenda expands and is further integrated into its operations. ADB already tags almost 60% of its projects as contributing to ESG. However, IED's project document review for this paper found significant variations in the extent and nature of the ESG content in ADB operations. The current undifferentiated approach does not allow any further characterization of the relative importance of ESG and the current high proportion of operations tagged ESG risks depriving the tagging exercise of any real meaning.

The paper offers for consideration a more differentiated categorization of operations for their ESG content in Chapter 3. This should be viewed as one option and a starting point for further discussions to determine a more useful categorization for ADB's ESG operations. It suggests that projects be divided into three pillars:

- (i) core environmental operations where environmental protection or advancement rather than economic growth is the main intended outcome,
- (ii) core growth-oriented operations with major environmental co-benefits, and
- (iii) core growth-oriented operations with minor environmental co-benefits.

Projects in wetlands protection, coral reef rehabilitation and sewage treatment would clearly be included in the first category; solar panel projects with transmission lines for renewable generation projects in the second; and roads with special elephant crossings and habitat restoration offsets beyond safeguards in the third. A road rehabilitation project that has an environmental safeguard category B and which has an environmental management plan would not be counted under any of the three pillars.

ADB could establish current baseline numbers, and then set targets for projects under ESG pillars (i), (ii), and (iii) as part of its Strategy 2030 document or in the follow-up Corporate Results Framework. Sector and thematic targets could be linked to the Corporate Results Framework when the operational plans are aligned with Strategy 2030.

In the future, the bulk of ADB's ESG work is likely to remain in the four core ESG sectors (ANR, energy, transport, and WUS) and in pillar (ii). ADB could set targets to progressively increase its financing for environmental projects under pillar (i) and core growth projects with major environmental co-benefits under pillar (ii). For example, ADB could finance more urban environmental improvements through air and water pollution prevention and abatement. In other cases, targets could be introduced that move core growth projects along the environmental continuum and increase the environmental co-benefits that are generated, i.e., moving projects from pillar (iii) to pillar (ii). For example, in the transport sector, ADB could move from financing roads to financing mass transit or climate change adaptation projects could incorporate more ecosystem-based adaptation approaches rather than relying solely on engineering solutions.

Views from External Experts

Hideyuki MORI

President

International Global Environmental Strategies (IGES)

Overall, this review provides a welcome input to the Strategy 2030 of the Asian Development Bank (ADB), and, hopefully, it will serve to strengthen ADB's contribution to resolving environmental problems in the region which have resulted from the region's resource- and emission-intensive growth pattern. ADB is also expected to make important contributions to the landmark global decisions on climate change and the Sustainable Development Goals in 2015. We welcome the report's suggestion that ADB could become the region's "environmental sustainability bank" (p. 37). Focused efforts to contribute to strengthening environmental sustainability are expected to be a major element of ADB's value addition and comparative advantage in the future, especially in cooperation with new regional development banks.

The report observes that global environmental challenges require "a major shift in the conventional development paradigm and transition to a low carbon growth path as rapidly as possible" (p. 35). The report's specific recommendations are certainly welcomed, and can be expected to be effective in strengthening ADB's environment-related contributions, although they may not necessarily be enough to lead to transformation. Nevertheless, given the current status of ADB's efforts, the recommendations in this report are very important as the next step, and it is hoped that these could be steadily strengthened in the future.

In terms of transformation, the document retains the focus on the concept of economic growth, despite the global agreement to develop measures of human well-being that move beyond GDP. ADB should take a leading role in this discussion. This paper itself acknowledges that environmental degradation and pollution are undermining development gains and that economic growth is no longer the sole driving force of poverty reduction. Economic growth was originally seen as a means not an end. If it is no longer contributing effectively to those ends, then it implies that we need to refocus more directly on those ends, such as poverty reduction, jobs, and health, and reconsider what means would better facilitate their achievement. Moreover, in recognition of the body of research which argues that the potential of economic growth is limited by natural resource constraints, ADB in its new strategy could go further than this paper in outlining its contribution to the transformation required to get to a low carbon growth path.

The need for ADB to take a stance on coal-fired power stations and large hydropower projects is clear, but what is not clear is whether sophisticated technological improvements should be sufficient justification for including such projects for ADB financing.

It is apparent that tagging of ESG has reflected a desire of staff to be seen as responding to overall ADB strategies, but in the process unfortunately over-estimating ADB's actual contribution to ESG. Nevertheless, the overall trend is positive and needs to be strengthened in the forthcoming strategy. The proposed re-classification into core

environment and growth-oriented projects with environmental co-benefits may help to redress the over-estimation problem, but one suspects that it would just lead to many more non-core ESG projects.

The recent trend in the PRC is of particular interest. The role of the Global Environment Facility (GEF) highlights how partnerships have helped transition the ESG portfolio from being almost non-existent to becoming the dominant form of borrowing. ADB should look to this experience for lessons.

The report notes ADB's impressive range of knowledge products on environmental sustainability issues. Future knowledge products could play an important role in developing more transformative measures.

In conclusion, we hope this report will play an important role in promoting ADB's efforts to become the region's "environmental sustainability bank."

Juan-Carlos Altamirano

World Resources Institute (WRI)

The paper provides a useful overview of the progress of the environmentally sustainable growth (ESG) agenda of the Asian Development Bank (ADB). The findings provide clear indications of the key issues and topics that ADB needs to consider to advance this agenda. Moreover, the paper highlights the need for ADB to have a clear definition and conceptual framework for ESG. In addition, it recognizes that current ESG planning is focused on climate change. For a truly comprehensive approach, pressing issues such urban air pollution, water scarcity, natural resource degradation, deforestation, and biodiversity loss should not be lost sight of.

Three findings can be considered crucial. First, although ADB indeed tagged most ESG projects appropriately, in over 25% the contribution to ESG was rather limited. Thus, the actual impact of environment objectives in ADB's sustainability agenda may be overstated. We agree with the paper's suggestion that ADB should refine the categorization of ESG operations along three pillars: "(i) core environmental operations, (ii) economic growth-oriented operations with major environmental co-benefits, and (iii) economic growth-oriented operations with minor environmental co-benefits." The proposed refinement of the projects' categorization would help their prioritization and direction within the environmental priorities of the region, as well as supporting more targeted actions.

Second, ADB's past strategies for the People's Republic of China and India show that it is essential for ADB to change how it considers ESG in its projects. The paper indicates that a large number of projects (basically focused on infrastructure development) include environmental improvements as co-benefits and not as a main goal to be attained. It is desirable then, to shift the focus of how projects reflect environmental sustainability.

Third, the paper appropriately asks for clarification of ADB's position on supporting coal use and other greenhouse gas-emitting and natural-resource-depleting activities, as well as on large hydropower development. It would be helpful for ADB to consider further actions such as: (i) complementing ADB's energy efficiency work on the generation/supply side with projects that promote efficiency on the demand side as well; (ii) moving the focus from grid to distributed power solutions as they are an

increasingly useful option for rapidly delivering (more reliable) access; (iii) supporting project development with a more rigorous comparison of the costs and benefits of different energy options before making any investment; (iv) considering not only restricting financial support for new coal plants in favor of supercritical or more efficient plants, but also agreeing a timetable for phasing out preferential funding terms; and (v) considering the crucial energy–water nexus, as it is becoming a greater concern, with new projects accounting for water stress indicators.

One briefly mentioned finding may have significance for the future of the Asia and Pacific region. The paper states that ADB has the requirements to become the de facto environmental sustainability bank for the region. ADB is “well positioned to better mainstream environmental concerns in its traditional core infrastructure work by integrating greater environmental co-benefits.” It may be more effective to advance the ESG agenda through synergies with existing multilateral development banks and emerging global and regional players like the Green Climate Fund, the Asian Infrastructure Investment Bank, and the New Development Bank BRICS.

The first of the two main recommendations, that future ADB strategies and policies should provide more clarity as to what ESG implies for ADB, is key for future operations. Projects should be focused more on advancing and integrating solutions for a climate-resilient future and less on just considering environmental protection or resource efficiency. The second recommendation on better categorization and targets for ESG is also supported.

CHAPTER 1

Introduction

1. Rapid economic growth in the Asia and Pacific region has not only contributed to lifting hundreds of millions out of poverty and made Asia an economic and political powerhouse, it has also left an indelible stain on the environment. The extensive and sometimes indiscriminate exploitation of Asia’s natural capital is now clearly revealing negative side effects in terms of human health and welfare, as well as potentially eroding the significant social gains made in the recent past.

A. Rationale

2. The member countries of the Asian Development Bank (ADB) are faced with immediate and serious environmental challenges. These include increasing urban air pollution, lack of proper solid waste management, degradation of fresh water resources, soil erosion, destruction of biodiversity habitats, and mass extinction of species. These have the potential to reverse the impressive economic progress made to date, reduce the quality of life, and even to cause pandemics. These challenges are increasingly exacerbated by weather-related natural disasters, climate change impacts and related threats that can further disrupt and reverse development efforts and which require comprehensive mitigation and adaptation actions. There is growing recognition that the driving force behind successful poverty alleviation—increasing gross production and productivity—may have reached an impasse, to the point where these environmental challenges pose growing threats to the effective achievement of ADB’s poverty reduction mandate. This is recognized by ADB’s national stakeholders, who increasingly identify environmental degradation and climate change, together with declining natural resources, as among the top threats to development in their countries (Table 1).

Member countries of ADB are faced with immediate and serious environmental challenges

Table 1: Threats to Development: Recent ADB Stakeholder Perception Surveys

2006	2009	2012
1. Poor governance	1. Corruption	1. Corruption
2. Poor infrastructure	2. Environmental degradation and climate change	2. Environmental degradation and climate change
3. Corruption	3. Widening gap between rich and poor	3. Poor infrastructure
4. Limited educational opportunities and inadequate health services	4. Poor infrastructure	4. Limited educational opportunities and inadequate health services
5. Low investment rates	5. Poor governance	5. Poor governance
6. Lack of private sector activity	6. Limited educational opportunities and inadequate health services	6. Widening gap between rich and poor
7. Income inequality	7. Low rate of investment	7. Low rate of investment
8. Environmental degradation	8. Lack of an active private sector	8. Lack of an active private sector
	9. Lack of natural resources	9. Lack of natural resources

Note: Only eight threats were enumerated in the 2006 survey.

Sources: Asian Development Bank Stakeholder Perceptions Surveys for 2006, 2009, and 2012.

3. Because of the broad range of actions needed to reverse climate change and manage its impacts, it is the biggest long-term environment-related challenge Asia currently has to address. The Paris Agreement on climate change in December 2015¹ offers Asia an opportunity to secure its development progress. By agreeing to the terms in Paris, ADB member countries have *de facto* affirmed that the rise in greenhouse gas (GHG) emissions requires a shift in economic policy in Asia to reduce the reliance on carbon-based fuels as soon as possible. By accepting the need to keep global warming well below 2°C, countries have also agreed that global emissions need to be reduced as quickly as possible and that the momentum created by the intended nationally determined contributions should continue by ramping up actions on emissions every 5 years with the assistance of development partners, including the ADB. However, concerns persist about how this critical transition can be achieved without limiting economic growth in the short term. There are also new concerns as to whether the Paris Agreement has underestimated the challenge, given the emergence of new data.²

4. The Independent Evaluation Department (IED) has prepared this paper on the relevance and initial effectiveness of ADB's strategic response to the region's challenges for environmentally sustainable growth (ESG), including climate change, with a view to informing ADB's proposed Strategy 2030 and other environment-related strategy documents.³

B. Environmentally Sustainable Growth: Context and Challenges

ADB's Environmentally Sustainable Growth agenda is at a critical juncture

5. ADB's Environmentally Sustainable Growth agenda in the Asia and Pacific region is at a critical juncture. Slowing economic growth in Asia, the recently endorsed United Nations Sustainable Development Goals (SDGs)⁴ and the Paris Agreement all come at a time when the need for economic growth and poverty reduction remains high but when pressures on the environment are also reaching perilous thresholds. The SDGs and the Paris Agreement reflect the international community's consensus that current and future social, economic, and environmental challenges, including climate change, must be addressed through cooperative approaches together with locally adapted SDG targets and indicators to ensure country ownership and development effectiveness.

6. The SDGs highlight the links between the environment and the overall goal of poverty reduction. Environmental degradation and climate change exacerbate existing vulnerabilities, including those related to clean drinking water, adequate sanitation, and public health. The poor are also more vulnerable to environmental degradation as they disproportionately depend on natural resources ecosystem services for their livelihoods and food security. Poorer people are less resilient to natural hazards, including those increasingly associated with climate change.

¹ The Paris Agreement is a 12-page Annex (pp. 21–32) to the Conference of the Parties decision to allow some countries to sign the agreement without formal ratification processes in their country parliaments. Source: UNFCCC. Conference of the Parties. 2015. *Adoption of the Paris Agreement. Proposal by the President*. <http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>.

² See recent data on the accelerated melting of the ice caps and higher water storage in clouds: Guardian 4 April 2016: <http://gu.com/p/4t37t/sbl>, and International New York Times 30 March 2016: http://www.nytimes.com/2016/03/31/science/global-warming-antarctica-ice-sheet-sea-level-rise.html?_r=0

³ IED. 2015. *Evaluation Approach Paper: Topical Paper on ADB's Environmentally Sustainable Growth Agenda: A Strategic Review*. Manila: ADB.

⁴ The Sustainable Development Goals (SDGs) were adopted by world leaders in September 2015. The 17 SDGs build on the Millennium Development Goals, and aim to end all forms of poverty.

7. To make economies more inclusive, the Sustainable Development Goals encourage countries to make a transformational change in production systems, employment patterns, and technologies, as well as to accompanying behaviors and lifestyles. They aim to enable countries to transition to more sustainable and low-carbon production and consumption. Countries' own SDG and climate change targets and indicators will present an opportunity for ADB to make ESG an even more central part of its future strategies and operations and to support countries' environmental sustainability priorities and initiatives. The SDGs focus on the medium term to 2030, which aligns with the timeframe of Strategy 2030.

8. The extent to which countries follow up on the Paris Agreement will help to determine how soon they will be able to peak their GHG emissions and whether the collective desire to limit global warming to an increase of 2°C (or even 1.5°C) will be achievable. The agreement recognizes that the necessary shifts will not come easily. While seen by some as a weakness, the agreement's hybrid structure, with some elements voluntary and others legally binding, was a concession to enable all countries to sign the agreement.

9. If warming is not mitigated, the consequences for the region will be dire. While the intended nationally determined contributions are critical, they need to be regarded as a minimum. Emissions targets need to be complemented by firm national commitments for greater energy efficiency and use of renewable energy, and by policies, including the elimination of fossil fuel subsidies. Mitigation needs to be accompanied by parallel and, if possible, integrated commitments to enable countries to adapt to the adverse impacts of climate change. To undertake these actions, countries will need assistance, including support to increase their access to climate finance.

10. It is useful to review the unfinished environmental agenda of the Millennium Development Goals (MDGs) and to consider some of the gains made.⁵ The environmental sustainability MDG, for example, was not met in many developing countries.⁶ Overall, the Asia and Pacific region has maintained the proportion of land covered by forests and increased the proportion with protected status, although this varies from one country to the next. However, aggregate data mask regional differences and hotspots. Thus, much of the progress in forest cover has been due to afforestation programs in the People's Republic of China (PRC) and Viet Nam, while deforestation and qualitative degradation of the forested areas remain problems in many other countries, particularly in the rest of Southeast Asia.

11. In many parts of the region, ecological damage is evident in the form of growing biodiversity loss, water scarcity, water and air pollution, ocean acidification, fisheries depletion, deforestation, and wetland degradation. In 2008, for example, Asia and the Pacific recorded the world's highest number of threatened species, with Southeast Asia experiencing the most serious cases.⁷ In South Asia, water security is low and these areas may be disproportionately affected by more frequent and intense

If warming is not mitigated, the consequences for the region will be dire.... Emissions targets need to be complemented by firm national commitments and policies

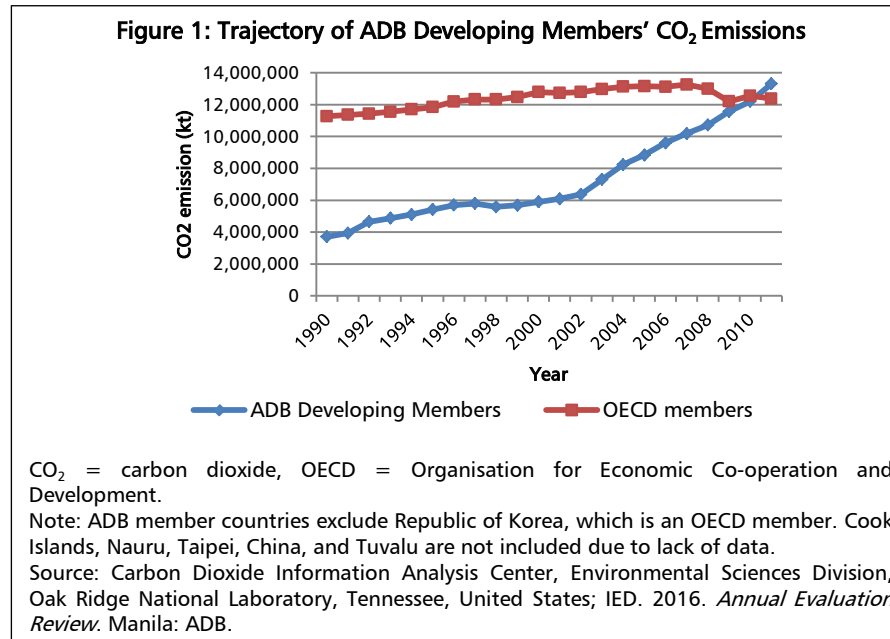
⁵ Asian Development Bank (ADB), United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP) and the United Nations Development Programme (UNDP). 2015. *Making it Happen: Technology, Finance and Statistics for Sustainable Development in Asia and the Pacific: Asia-Pacific Regional MDG Report 2014/15*. Bangkok.

⁶ United Nations Secretariat. 2015. *The Millennium Development Goals Report 2015*. New York.

⁷ UNDP. 2010. *State of Biodiversity in Asia and the Pacific*. Bangkok.

droughts and by other stresses on water management.⁸ Furthermore, about 1.7 billion people in the region, 42% of the population, still lack access to basic sanitation.

12. **The region has succeeded in reducing carbon dioxide (CO₂) emissions per unit of gross domestic product (GDP).** However, overall emissions in Asia dramatically increased from 2000 to 2010 and are still growing (Figure 1), whereas the average for countries of the Organisation for Economic Co-operation and Development (OECD) has leveled off. Several Asian countries⁹ are now among the largest global emitters of CO₂.



Asia's recent demographic and economic growth has been predominantly an urban phenomenon

13. Asia's recent demographic and economic growth has been predominantly an urban phenomenon. Cities now account for about 80% of Asia's GDP. As a result, the adverse effects of climate change and related impacts on air, water, and soil quality are primarily experienced in urban areas. Urban areas account for just half of the world's population but 75% of total energy consumption and carbon emissions. By 2050, Asia's urban population will nearly double from 1.6 billion in 2010 to 3 billion,¹⁰ putting additional stresses on both infrastructure and natural resources. Of the world's 28 megacities (i.e., cities with a population in excess of 10 million people), 17 are in Asia and the Pacific region. Increasing local urban air pollution has become a deadly parallel to increased GHG emissions, yet is receiving inadequate attention from development agencies, including ADB. The World Health Organization (WHO) reports that Asia and the Pacific region had the largest air-pollution-related burden in 2012, with an estimated 3.3 million deaths linked to indoor air pollution and 2.6 million due to outdoor air pollution.¹¹ Furthermore, World Health Organization's pollution data on 1,600 cities for 2014 found that half of the top 20 cities in the world with the highest

⁸ ADB. 2013. *Asian Water Development Outlook 2013*. Manila.

⁹ The People's Republic of China, India, and Indonesia are among the top ten greenhouse gas (GHG) emitting countries, with the PRC now being the biggest emitter in the world, mainly due to rising emissions associated with the burning of fossil fuels (particularly coal for energy generation and increasing use of petroleum in the transport sector). The most significant sources of Indonesia's rising GHG emissions are land use change and deforestation, often associated with the expansion of palm oil plantations. Data from CAIT Climate Data Explorer. 2015. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>.

¹⁰ ADB. 2011. *Asia 2050: Realizing the Asian Century*. Manila.

¹¹ World Health Organization. <http://www.who.int/mediacentre/news/releases/2014/air-pollution/en/>

levels of particulate matter 2.5¹² emissions were in India. Other cities with very high levels were located in Bangladesh, the PRC, and Pakistan.

14. **Half of Asia's urban population lives in low-lying coastal zones and flood plains.** These areas are particularly at risk from extreme weather-related impacts associated with climate change, including floods, storm surges, typhoons, and sea level rise.¹³ The region's cities, as both a significant source of global emissions and vulnerable zones for adverse climate and other environmental impacts, require significant climate mitigation and adaptation efforts to ensure their future sustainable development.

15. **The region's current resource- and emission-intensive growth pattern is not sustainable.** A new kind of growth is needed. The challenge is to achieve this while continuing to address poverty in its many dimensions. For example, at present the region's vast and rapidly growing energy demand is largely met through conventional fossil fuel sources, especially coal, which sharply increases Asia's conventional pollution and GHG emissions. However, despite the region's heavy reliance on fossil fuels, some 600 million people in Asia continue to live without access to electricity and 1.8 billion people with no access to modern fuels rely largely on biomass for cooking and heating. Investments are needed to meet this demand and to expand access to clean electricity, while supporting the region's transition to a low-carbon development path using more sustainable energy sources.¹⁴

16. **Environmental governance and institutions need to be strengthened.** The growing acknowledgement of the increasing environmental degradation in Asia and the Pacific has not been matched by sufficient action. An IED evaluation in 2014¹⁵ identified effective governance as a key driver in boosting environmental performance, yet poor governance and corruption are persistent issues across the region, as highlighted in the stakeholder surveys summarized in Table 1.

17. The international institutional and financing landscape is changing. The recently established Green Climate Fund (GCF) and new development finance institutions, such as the Asian Infrastructure Investment Bank (AIIB) and the New Development Bank BRICS (NDB BRICS), will offer both challenges and opportunities for ADB. The GCF's five investment priorities are intended to deliver significant mitigation and adaptation benefits, and they are all ESG-compatible.¹⁶

18. The GCF's priorities clearly overlap with parts of ADB's past and ongoing environmental work, and ADB could prove to be a key model and partner. For example, in its first round of funding, the GCF will provide a \$31 million grant to strengthen the resilience of an ADB-supported Urban Water Supply and Wastewater Management

A new kind of growth is needed. The challenge is to achieve this while continuing to address poverty

The international institutional and financing landscape is changing

¹² Measurement of fine particulate matter of 2.5 micrometers or less in diameter (PM2.5) is considered to be the best indicator of the level of health risks from air pollution. High concentrations of small and fine particulate pollution are particularly associated with high numbers of deaths from heart disease and stroke, as well as respiratory illnesses and cancers.

¹³ Y. Hijioka, et al. 2014. *Asia. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects.* Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, V.R. et al. (eds.)]. Cambridge University Press, Cambridge, United Kingdom.

¹⁴ ADB. 2015. *Knowledge and Power: Lessons from ADB Energy Projects.* Manila.

¹⁵ IED. 2014. *Inclusion, Resilience, Change: ADB's Strategy at Midterm.* Manila: ADB.

¹⁶ These priorities are transforming energy generation and access, creating climate-compatible cities, encouraging low-emission and climate-resilient agriculture, scaling up finance for forests and climate change, and enhancing resilience in small island developing states.

Project in Fiji.¹⁷ AIIB and the NDB BRICS are both expected to focus on infrastructure and aim to introduce faster processing and implementation than the established multilateral development banks (MDBs). Both potentially complement existing MDBs, including ADB, by providing additional finance and addressing the region's still significant infrastructure needs. However, it is not yet clear how well these institutions will balance infrastructure development with ESG, providing another opportunity for ADB and others to enhance the social and environmental benefits of their support.

C. Objective and Methodology

19. This paper aims to assess ADB's strategic response to the ESG agenda, which was first identified as a corporate priority in Strategy 2020 in 2008.¹⁸ The paper covers 2004–2014 and focuses on the following key questions (footnote 3):

- (i) What are the major ESG challenges presently facing Asia and the Pacific region?
- (ii) Do ADB's strategies, sector policies, operational plans and directions provide sufficiently coherent guidance to enable ADB to support the right types of ESG operations?
- (iii) What are the trends in ADB's portfolio and do these signal a real and appropriate shift toward more support for ESG? Are the current guidelines for classifying ESG operations clear and justifiable, and do staff in operations follow them well and consistently?
- (iv) What has been the performance of ESG-tagged projects?
- (v) What recommendations can be made based on the findings of the paper?

20. The evaluation combined quantitative and qualitative methods to answer these questions. This involved review of literature, ADB corporate documents, country strategies, and IED evaluation studies; portfolio analysis and review of a random sample of project documents; key informant interviews within ADB; and an online questionnaire survey to project team members of ESG projects.

D. Organization of the Report

21. Chapter 2 examines ADB's evolving strategies and policies supporting ESG, and its institutional response to support the ESG agenda. Chapter 3 reviews how ADB ESG priorities are being operationalized at the country level with a focus on the PRC and India, and the extent to which ADB's ESG-tagged operations actually support ESG. Chapter 4 summarizes and presents issues for ADB to consider in its future approach to its continuing high-priority ESG strategic agenda.

¹⁷ ADB. 2015. ADB Project in Fiji Among Those First Financed by Green Climate Fund. News release. 6 November.

¹⁸ ADB. 2008. *Strategy 2020: The Long Term Strategic Framework of the Asian Development Bank 2008–2020*. Manila.

CHAPTER 2

The Environmentally Sustainable Growth Agenda

22. As Asia has changed dramatically, so too have ADB's policies and strategies evolved in significant ways. While economic growth has remained a priority, human development and the environment are emerging as increasing concerns. This was clearly reflected in Strategy 2020 and subsequent sector policies and operational plans, as well as in recent country partnership strategies. ADB's specific guiding documents on the environment have likewise evolved over the past decade and a half, and increasingly recognize the need to promote environmental sustainability, invest in natural capital, promote stronger environmental governance, and address the challenges of climate change. The evolution of some of the key documents over the past decade and a half is considered in this chapter.

A. ADB Policies and Strategies

23. ADB's 2002 Environment Policy affirmed that "economic growth is no longer considered sufficient to reduce poverty."¹⁹ Rather, "the economic, social, and environmental policies that shape the process of growth and development must also address the needs of the poor and must ensure the sustainable use of resources upon which continued growth depends." In other words, it clearly linked economic growth and environmental sustainability. The Environment Policy identified eight regional and global environmental concerns in Asia and the Pacific:²⁰

- (i) urban air pollution;
- (ii) water pollution;
- (iii) municipal and industrial solid waste;
- (iv) land degradation;
- (v) deforestation;
- (vi) biodiversity loss;
- (vii) coastal, marine, and freshwater aquatic resources; and
- (viii) climate change.²¹

24. These challenges continue to be crucial although within ADB their relative importance has shifted over time. The Environment Policy itself, which also included guidance on environmental safeguards, was officially archived with the approval of the Safeguard Policy Statement in 2009,²² which examines environmental priorities mainly from the perspective of "do no harm."

ADB's 2002 Environment Policy affirmed that "economic growth is no longer considered sufficient to reduce poverty"

¹⁹ ADB. 2002. *Environment Policy of the Asian Development Bank*. Manila. para. 3, p. 1.

²⁰ This was based on two earlier assessments: ADB. 1997. *Emerging Asia: Changes and Environmental Challenges in the Region*. Manila; and ADB. 2001. *Asian Environmental Outlook*. Manila.

²¹ Appendix 1 highlights the main environmental challenges in the region as identified in ADB policy and strategy documents over time.

²² ADB. 2009. *Safeguard Policy Statement*. Manila.

25. **ADB's subsequent strategies moved away from the Environment Policy's broad approach and became more selective.**²³ The Medium-Term Strategy for 2006–2008²⁴ recognized that the environmental agenda was massive and broad. It therefore proposed that ADB be selective, based on its comparative advantage, and focus on environmental issues specific to the sectors in which it was actively involved and had knowledge that would enable it to be effective. It steered ADB away from sectors such as fisheries and forestry, even though the Environment Policy had indicated that deforestation and aquatic resources in Asia were major concerns.

26. Environmentally sustainable growth became one of the three strategic agendas of Strategy 2020, the others being inclusive economic growth and regional integration. Strategy 2020 observed that rapid economic growth was putting severe strains on the environment even though poverty reduction remained the most significant challenge that ADB would seek to address. The environment was also identified as one of five core areas of ADB operations, together with infrastructure, regional cooperation and integration, financial sector development, and education. Attention to the environment was expected to focus primarily on helping countries address three areas:

- (i) *Climate change.* ADB would support governments to move economies onto low-carbon growth paths by: (a) improving energy efficiency, (b) expanding the use of clean energy sources, (c) reducing fugitive GHG emissions, (d) modernizing public transport systems, and (e) arresting deforestation. ADB would also support climate change adaptation, disaster risk management and sustainable management of forests and other natural resources.
- (ii) *Livable cities.* ADB would address a range of environmental problems resulting from rapid urbanization, including reducing air and water pollution, supporting cleaner modes of transport, improving systems for solid waste management, and reducing urban waste.
- (iii) *Complementary actions.* ADB would mainstream environmental considerations into country policies and investment programs, while strengthening the legal, regulatory, and enforcement capacities of public institutions.

27. Strategy 2020 did not clearly define ESG²⁵ or the concept of “livable cities.” Nor did it specify what ESG was expected to entail either for the various sector programs or for other major themes ADB was pursuing. Sector and thematic operational plans subsequent to Strategy 2020 have, however, addressed different aspects of ESG and provided varying levels of detail about what pursuing ESG implies. Energy is the only sector still supported by a Board-approved policy,²⁶ which in 2009 identified environmental sustainability as an objective and sought to promote clean coal technologies together with low-carbon development and allowed ADB support for large hydropower projects. The Paris Agreement on climate change and continuing

²³ Appendix 2 presents the proposed environmental priority areas of key ADB strategies over time.

²⁴ ADB. 2006. *Medium-Term Strategy II, 2006–2008*. Manila. This strategy identified agriculture and natural resources (ANR)—except fisheries, livestock, irrigation, and water management—as one of the sectors where ADB will be more selective in its operations; and fisheries as one of the subsectors ADB should exit from. The strategy was silent on ADB's engagement in forestry.

²⁵ “To realize environmentally sustainable growth, ADB will support the use of environmentally friendly technologies, adoption of environmental safeguard measures, and establishment of institutional capacities to strengthen their enforcement. Through regional cooperation, ADB will promote effective approaches and solutions and facilitate transfer of knowledge and technologies on environmental management. In addition, ADB will further strengthen regional initiatives for mitigating and adapting to climate change due to Asia's rising contribution to carbon dioxide emissions.” ADB. 2008. *Strategy 2020*. Manila. p. 12.

²⁶ ADB. 2009. *Energy Policy*. Manila.

Environmentally sustainable growth became one of the three strategic agendas of Strategy 2020

Strategy 2020 did not clearly define ESG

technological developments provide an opportunity for ADB to articulate the nature of ADB's support to the power sector in transitioning Asia toward a lower carbon path and promoting renewables.

28. A more comprehensive elaboration of ADB's understanding of environmentally sustainable growth was presented in the Environment Operational Directions 2013–2020.²⁷ This was the first guidance document since the Environment Policy in 2002 to present a more holistic ADB perspective on environmental concerns. It was issued soon after the United Nations Conference on Sustainable Development (Rio+20) in 2013 and incorporated some of the conceptual advances at that meeting (the increasing focus on "green growth" and environmental governance, for example). It also expanded on and moved beyond the three ESG-related priorities of Strategy 2020 by identifying "mutually supportive directions for operations based on challenges facing the region, ADB's comparative strengths, and overall consistency with Strategy 2020." The resulting four priority ESG areas were:

- (i) promoting a shift to sustainable infrastructure;
- (ii) investing in natural capital;
- (iii) strengthening environmental governance and management capacity; and
- (iv) responding to the climate change imperative, which cuts across the other three areas.

29. The Environment Operational Directions (EOD) uses the terms ESG and green growth interchangeably – and presumably synonymously – but does not clearly define either one. It states that "green growth is about synergizing environmental protection and economic growth, while reducing poverty and ensuring equitable outcomes in terms of human well-being," thereby effectively overlapping ESG with inclusive growth, which is also directly concerned with reducing poverty and ensuring equitable outcomes in terms of human well-being. The definitions of green growth used by other multilateral organizations, [e.g., United Nations Environment Programme (UNEP), OECD, and the World Bank] are presented in Appendix 3. While each organization frames sustainable development as the goal, they have different views as to which aspects of sustainability are primary. The World Bank and UNEP pay more attention to the social aspects of sustainable development while OECD focuses more on the economy and the environment.

30. For this paper, IED considers projects to be supporting ESG if they deliver environmental benefits that improve resilience by improving the environment or significantly abating negative environmental effects and enhancing human well-being. Thus, the application of environmental safeguards, while a necessary precondition for an operation to be environmentally sustainable, is not sufficient for a project to be considered contributing to ESG. In IED's view, while environmental management plans (EMPs) introduce mitigation measures to avoid and minimize adverse project impacts, they do not necessarily provide the additional environmental benefits that would truly support ESG.

31. Strategic environmental assessments (SEAs), which can identify cumulative environmental impacts and EMPs through the safeguard categorization of a project, can be an important entry point for identifying environmental issues and incorporating measures into project design that do more than just addressing environmental risks.

A more comprehensive elaboration of ADB's understanding of environmentally sustainable growth was presented in the Environment Operational Directions

²⁷ ADB. 2013. *Environment Operational Directions 2013–2020: Promoting Transitions to Green Growth in Asia and the Pacific*. Manila. Executive Summary, p. v.

Such measures can then positively enhance environmental services, improve resource efficiency, prevent or abate pollution, conserve or promote biodiversity, and/or adapt to or mitigate climate change. The ongoing IED evaluation on ADB's experience with safeguard implementation in a country context²⁸ examines the extent to which safeguard measures are being used in some countries as an opportunity to identify and support more aspirational environmental objectives, i.e., "do environmental good" as well as "do no environmental harm."

The EOD pays greater attention to environmental governance and natural resource management

32. Environment Operational Directions priorities differ from those in Strategy 2020 in two noteworthy respects. First, the EOD pays greater attention to environmental governance and natural resource management by including "investing in natural capital" as a priority. Natural capital was not mentioned in Strategy 2020 (even as a complementary activity). The second change was to replace "livable cities" with sustainable infrastructure. ADB's definition of sustainable infrastructure includes many dimensions of livable cities but lacks an explicitly spatial dimension or a commitment to governance, institutions, and human and environmental well-being. While it may be a more realistic representation of the projects ADB currently supports, "sustainable infrastructure" steps away from the aspirational goal of creating livable cities prioritized in Strategy 2020. The EOD reduce this earlier orientation to a more infrastructure-focused set of urban interventions, even though some recent and emerging ADB operations in various countries, including the PRC and India), seem to be moving in the opposite direction towards a more integrated approach (see Chapter 3).

33. Climate change was emphasized in ADB's concerns with environmental sustainability in the Midterm Review of Strategy 2020²⁹ and its associated action plan.³⁰ This was also true of the climate change strategy, issued in 2010,³¹ and a new climate change strategic framework for approval in early 2017.³²

34. Staff perceptions are generally consistent with the paper's findings that there is scope for ADB to clarify its environmentally sustainable growth agenda and to raise awareness of the Environment Operational Directions. To capture staff perceptions of ESG more quantitatively, IED administered an online survey³³ to staff working on or supporting ESG projects. This revealed a general recognition of ESG as a priority, with about 70% of staff reporting a clear understanding of ESG. However, almost half of the respondents did not agree that the Strategy 2020 ESG priorities of climate change, livable cities, and complementary actions provided a sufficient framework for addressing the region's environmental challenges. Two-thirds of the respondents were unfamiliar with the EOD. Of those who were familiar with the document, 72% said it provided adequate guidance for operationalizing ESG. More generally, staff felt that there was scope for ADB to clarify its ESG agenda and to raise awareness of the EOD.

²⁸ IED. 2015. *Evaluation Approach Paper: Thematic Evaluation Study: A Real-Time Evaluation of ADB's Safeguard Implementation Experience: Country Case Studies*. Manila: ADB.

²⁹ ADB. 2014. *Midterm Review of Strategy 2020. Meeting the Challenges of a Transforming Asia and the Pacific*. Manila.

³⁰ The Midterm Review reaffirmed ADB's commitment to: (i) scale up support for climate change adaptation; (ii) maintain assistance for mitigation through clean energy and energy efficiency projects and sustainable transport; (iii) mainstream adaptation and climate resilience in development planning, as well as in project design and implementation; (iv) strengthen integrated disaster risk management; (v) promote natural resource management; and (vi) and support Countries to access to global and regional funds for environment and climate change.

³¹ ADB. 2010. *Focused Action: Priorities for Addressing Climate Change in Asia and the Pacific*. Manila.

³² Preparation of background papers and consultations for the new strategy is ongoing.

³³ The online survey questionnaire was sent to 608 staff, of whom 104 responded for a response rate of 17%. The survey methodology and results are presented in Appendix 4.

B. Key Institutional Responses Supporting Environmentally Sustainable Growth

35. ADB has signaled the increasing prominence of the climate change challenge by renaming and reorganizing the Regional Sustainable Development Department to form a new Sustainable Development and Climate Change Department (SDCC). It has established a new climate change division within SDCC and it created a new climate change thematic group in 2015. This focus has been reinforced by the ADB President's recent commitment to double ADB annual lending for climate-change-related projects from \$2.8 billion in 2014 to \$6 billion in 2020, with \$4 billion for mitigation and \$2 billion for adaptation.³⁴ By then, ADB support for climate-change-related investments is projected to constitute about 30% of its total financing.

ADB committed to double ADB annual lending for climate-change-related projects from \$2.8 billion in 2014 to \$6 billion in 2020

36. Under ADB's revised project classification system (PCS),³⁵ projects will be tagged under the ESG strategic agenda if their interventions involve "a shift to low carbon and climate-resilient development interventions—including infrastructure investments—and preventing pollution, environmental degradation, biodiversity loss, and unsustainable resource use." These activities are then classified under one of the following subthemes: (i) natural resources conservation, (ii) urban environmental improvement, (iii) eco-efficiency, (iv) global and regional transboundary environmental concerns, (v) environmental policy and legislation, or (vi) disaster risk management. Further, all projects that involve climate change mitigation and adaptation activities are identified under the global and regional transboundary environmental concerns theme and are thus automatically also tagged as ESG.

37. Greater direction has been given to identifying ADB support for climate change mitigation and adaptation, which has been tracked separately from other ESG-related projects since 2012 for joint MDB annual reporting on climate finance. Climate risk screening of all new projects and climate vulnerability risk assessments, as needed, were also introduced by ADB in 2014. More detailed vulnerability assessments are required as part of project preparation when such risks are found to be *medium* or *high*.³⁶

38. In 2015, ADB raised \$500 million from an inaugural green bond issue, aimed at channeling more investor funds to ADB projects that promote low-carbon and climate-resilient economic growth in developing Asia.³⁷ The proceeds from ADB's 10-year green bonds will be used to finance climate change adaptation projects, such as those that climate-proof water, energy, transport, or other urban infrastructure. Climate change mitigation projects that may be financed by the bonds include those covering renewable energy, energy efficiency, and sustainable transport initiatives such as rail or bus services. Since 2010, ADB has also issued \$2.2 billion equivalent in water and clean energy bonds.

39. **Operational targets for environmental sustainability and climate change.** Strategy 2020 envisaged 25% of operations addressing ESG by 2012 against 14% baseline in 2006. The target was surpassed in 2010 and revised to 50% by 2016. ADB

³⁴ ADB. 2015. *ADB to Double Annual Climate Financing to \$6 Billion for Asia-Pacific by 2020*. News Release. 25 September.

³⁵ ADB. 2014. *Review of Project Classification System (PCS) - Staff Instructions*. Manila.

³⁶ For a summary of this process, see ADB. 2014. *Climate Management in ADB Projects*. Manila.

³⁷ ADB. 2015. *Inaugural ADB Green Bond to Drive More Funds to Climate Change Projects*. News Release. 13 March.

surpassed the revised ESG target during 2012–2014. In 2012, ADB also set a target of 60% of operations supporting climate change against a 2012 baseline of 39%. This target was adjusted to 45% in 2015.³⁸

40. **Partnerships are vital to deliver the ESG agenda.** There is wide recognition that if environmental concerns, including climate change, are to be addressed more effectively, there needs to be collaboration among numerous stakeholders, often for an extended period of time. Strategy 2020 aimed to expand ADB's alliances with its development partners to enhance knowledge sharing and the interchange of ideas, and stressed the need for a greater reliance on partnerships in areas outside ADB's core operational areas. Over the years, ADB has built productive and enduring partnerships with a range of agencies and organizations to promote ESG in the region, including the Global Environmental Facility (GEF), numerous international environmental nongovernment organizations (NGOs) and multidonor climate finance facilities, and most recently, the Green Climate Fund.³⁹

ADB's partnerships have been a catalyst integrating climate change and other environmental concerns into project designs

41. ADB's partnerships have been a catalyst for it to gain experience and learning by integrating climate change adaptation and other environmental concerns into project designs. These partnerships, such as those with the GEF and the Climate Investment Funds, especially the Pilot Program for Climate Resilience, also improve access to external concessional funding. For example, the ADB-GEF Sanjiang Plain Wetlands Protection Project⁴⁰ aimed to achieve an integrated conservation and development model to protect the natural resources (biodiversity, water, forests) of the Sanjiang Plain wetlands in the northeast of the PRC while improving the well-being of local communities. An IED evaluation of this project⁴¹ demonstrated that its pioneering and successful provision of alternative livelihoods to affected persons (such as forest resources management, wetland attendance and ecotourism) through non-cash compensation or in-kind support can work in wetland restoration projects.

42. The Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security is a good example of a multilateral partnership in which ADB has been significantly engaged in recent years. The initiative was launched in 2007 to address the urgent threats facing the coastal and marine resources of the Coral Triangle region,⁴² one of the most ecologically rich regions on earth.⁴³ The Coral Triangle Initiative is supported by a number of development partners in addition to ADB, including the GEF and such prominent international environmental NGOs as Conservation International, the Nature Conservancy, and the World Wide Fund for Nature (WWF). ADB serves as the lead agency on behalf of the GEF in organizing a comprehensive program of international technical and financial support and directly oversees implementation of several projects under the Coral Triangle Initiative action program.

³⁸ ADB. 2012. *Review of the ADB Results Framework*. Manila.

³⁹ Departments and offices identified 32 partnerships with bilateral organizations, research institutions, and think tanks in the areas of the environment and climate change. This was a finding of IED's recent evaluation on ADB's partnerships: IED. 2016. *Corporate Evaluation Study: Effectiveness of ADB Partnerships*. Manila: ADB. A list of these partnerships is presented in Appendix 5.

⁴⁰ ADB. 2005. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Global Environment Facility Grant to the People's Republic of China for the Sanjiang Plain Wetlands Protection Project*. Manila.

⁴¹ IED. 2015. *Project Performance Evaluation Report: People's Republic of China: Sanjiang Plain Wetlands Protection Project*. Manila: ADB.

⁴² The Coral Triangle region spans six countries: Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands, and Timor-Leste.

⁴³ ADB. 2010. *ADB Support to the Coral Triangle Initiative*. Manila.

43. ADB has produced a significant number of technical publications on a range of issues related to environmental sustainability and climate change, by almost all departments and across sectors. IED's evaluation of knowledge products and services in 2013 found that there was a proliferation of such outputs in ADB. A number of the environmental flagship publications reviewed were of high quality.⁴⁴ The environment was also the most common theme of seminars and events hosted by ADB communities of practice (now sector and thematic groups). Appendix 6 provides a list of environment and climate change-related knowledge work produced during 2012–2015 from ADB's K-Nexus database of knowledge products and services.

44. It is not always clear how the numerous environment-related knowledge products ADB produces are used by ADB staff and client countries or the extent to which they inform ADB financing operations. Nevertheless, complementary knowledge products, such as guidelines for climate-proofing investments through a combination of engineering and nonengineering solutions for a number of sector programs (e.g., in agriculture, transport and energy), have relevance and value. Some of these knowledge products are flagship studies and publications prepared in partnership with other development institutions, including the UN Economic and Social Commission for Asia and the Pacific (UN ESCAP) and the UNEP. An example of an ADB and ADB Institute flagship product is the *Managing the Transition to a Low-Carbon Economy*.⁴⁵ Noteworthy examples of recent knowledge products on ESG produced in partnership with other development organizations include *Green Growth, Resources, and Resilience: Environmental Sustainability in Asia and the Pacific* (produced with UNEP and UN ESCAP)⁴⁶ on natural resource use trends and responses and *Ecological Footprint and Investment in Natural Capital in Asia and the Pacific* (produced with WWF),⁴⁷ which included examples of approaches to sustainably manage natural capital in the region based on experiences with the Heart of Borneo Initiative, the Coral Triangle Initiative, the Greater Mekong Subregion (GMS) Core Environment Program and the Living Himalayas Framework for Cooperation.

ADB has produced a significant number of technical publications on a range of issues related to environmental sustainability and climate change

⁴⁴ IED. 2012. *Special Evaluation Study on Knowledge Products and Services: Building a Stronger Knowledge Institution*. Manila: ADB.

⁴⁵ ADB and ADBI. 2015. *Managing the transition to a Low-Carbon Economy*. Tokyo.

⁴⁶ ADB, UN ESCAP, and UNEP. 2012. *Green Growth, Resources, and Resilience: Environmental Sustainability in Asia and the Pacific*, Bangkok.

⁴⁷ ADB, WWF, and Global Footprint Network. 2012. *Ecological Footprint and Investment in Natural Capital in Asia and the Pacific*, INWK, UK.

CHAPTER 3

Country Strategies and Portfolio Trends

45. By 2020, all the current ADB developing member countries except Afghanistan and Nepal would probably have reached middle-income status (footnote 29). Given that ADB works across all developing countries in the region, it is in a good position to learn how various portfolios are used to address environmental challenges as these countries move up the development ladder.

A. Country Partnership Strategies

46. To assess how ADB corporate ESG priorities are currently being applied at the country level, IED reviewed 16 country partnership strategies (CPSs) approved between 2011 and 2015, together with their linked environmental assessment summaries.⁴⁸ These are the current CPSs for Bangladesh, Cambodia, Fiji, Georgia, India, Indonesia, Kazakhstan, Lao People's Democratic Republic, Myanmar, Nepal, Pakistan, Papua New Guinea, the PRC, the Philippines, Thailand, and Viet Nam.

CPSs paid considerable attention to ESG-related themes, even though not all specifically used the term ESG

47. CPSs paid considerable attention to ESG-related themes, even though not all specifically used the term ESG. The main common element was a growing concern with the damaging effects of extreme weather events and the increasing need for support to help countries strengthen their resilience and adaptation to climate-related natural disasters, in both rural and urban areas. Rising GHG emissions and the need to mitigate them were also highlighted in numerous recent CPS-linked environmental assessments, particularly for the larger countries, eligible to borrow only from ADB's ordinary capital resources (OCR). The negative environmental effects of rapid urbanization, such as poor housing, congestion, slums, traffic jams, air and water pollution, and solid waste accumulation, were concerns that cut across both Asian Development Fund (ADF) and OCR countries. Likewise, natural resource management challenges—water scarcity and resource management, desertification, soil degradation, deforestation, loss of biodiversity and other ecosystem services—were identified in many countries and this was reflected in the priority setting for the respective CPSs.

48. However, several of the environmental assessments attached to the CPSs were not integrated into the main sector plans of the CPS. Thus while CPSs generally recognized the importance of environmental concerns, the specific issues raised in the environmental assessments were not always consistently incorporated into sector planning. There were nonetheless some emerging positive examples, as with the planned CPS in Lao People's Democratic Republic (2017–2021), where the environmental and agriculture and natural resources (ANR) assessments are being

⁴⁸ The CPSs were reviewed as part of IED's evaluation of ADF X-XI operations. The review found that ADB's commitment to promote ESG is evident in most recent CPSs. (IED. 2015. *Corporate Evaluation Study on Asian Development Fund X-XI Operations*. Manila: ADB).

integrated. Stronger integration of sectors and themes should produce a more robust country strategy document that is better positioned to inform the future pipeline of projects and provide a platform for more effective policy dialogue with respect to ESG. This would also provide a greater opportunity to introduce important environmental initiatives such as investing in natural capital and taking landscape approaches to ecosystem management into the country operational programming process.

49. In December 2015, ADB introduced reforms to streamline the CPS process and improve its value addition.⁴⁹ A key change is that there will no longer be a stand-alone environmental assessment. Rather there will be a combined inclusive growth and sustainability assessment that merges the previously separate economic, poverty, gender, private sector, and environmental analyses. Sector assessments will be delinked and undertaken independently from the CPS. While this may enhance streamlining and the integration of approaches, it will be important to ensure that implementing these reforms does not result in deemphasizing or weakening the ESG agenda and that environmental concerns are adequately integrated into sector plans.

B. Comparing the Country Partnership Strategies for the People's Republic of China and India

50. **People's Republic of China: Country Partnership Strategy, 2011–2015.** Of the CPS documents reviewed by IED, the ESG agenda was most central to the strategy and most comprehensively integrated into sector priorities in the CPS for the PRC. In other country strategies, the environment, while gaining prominence, is still largely covered by the environmental co-benefits from other interventions, particularly those dealing with infrastructure and economic growth. This section highlights some of the innovative features of the PRC CPS that may demonstrate how other future CPSs can evolve. It also reviews the India CPS, which is more typical of how other recent CPSs have addressed ESG.

51. The 2011–2015 CPS for the PRC⁵⁰ points out that the country's rapid economic growth has exerted enormous pressure on the environment. Many of the PRC's 500 largest cities do not meet recommended air quality standards and seven of them are ranked among the world's ten most polluted. Water demand is outstripping available supply, some river basins and groundwater sources are already overexploited in many heavily populated urban areas, and water quality has fallen below safety standards. Climate change is one of the most significant development challenges for the PRC. The country is experiencing rising temperatures and sea levels, shrinking glaciers and permafrost, and more frequent extreme weather events. As a result, the government has placed equal emphasis on mitigation and adaptation and is seeking ADB assistance in both of these areas.

52. The CPS for the PRC is fully aligned with Strategy 2020: its three pillars are ESG, inclusive economic growth, and regional integration. In addition, the CPS states that all ADB support for 2011–2015 would be "viewed through an environmental lens to further green the portfolio and mainstream climate change considerations into future operations." Interventions in all four priority sectors— ANR, energy, transport, and urban development—are expected to help the country move toward more environmentally sustainable development.

ADB introduced reforms to streamline the CPS process... a key change is that there will no longer be a stand-alone environmental assessment

The CPS for the PRC states that support would be "viewed through an environmental lens to further green the portfolio and mainstream climate change considerations into future operations"

⁴⁹ ADB. 2015. *Reforming the Country Partnership Strategy*. Manila.

⁵⁰ ADB. 2012. *People's Republic of China: Country Partnership Strategy 2011–2015*. Manila.

The PRC CPS affirmed it would also promote innovation and value addition

53. The CPS affirmed that ADB would continue to mobilize grant resources for ADB-administered and global trust funds, including GEF and the Climate Investment Funds “for activities related to prevention of land degradation, promotion of clean energy and clean coal technologies, and other climate change-related issues.” It would also promote innovation and value addition by including a concentrated solar thermal power project that would “pilot leading-edge clean technology” and, more generally, address environmental and climate change issues by “supporting land protection, water resources conservation, integrated urban development, and sustainable urban transport with safety, intermodal, and logistics features.” In response, a number of recent innovative ADB-financed ESG-related projects in the PRC are “cutting edge” operations. The new PRC CPS for 2016–2020 further recognizes the importance of ESG. The strategy incorporates ESG as its first objective, and aims to improve environment and management of climate change by realizing “ecological civilization.”⁵¹

Increasingly growth objectives are being met in ways that provide environmental co-benefits

54. **India: Country Partnership Strategy, 2013–2017.** The current CPS recognizes that “to sustain high and inclusive growth, India needs to expand and consolidate structural reforms, remove its infrastructure deficit, and improve the quality and coverage of basic social services.”⁵² Environmental sustainability is a secondary priority and is justified “because population growth, rapid urbanization, and economic expansion have placed unprecedented pressures on the country’s natural resources.” This presumed tradeoff between development objectives and environment is a common finding in CPSs. But increasingly growth objectives are being met in ways that provide environmental co-benefits. Like the PRC CPS, the new India CPS adopted the three Strategy 2020 agendas as its pillars, to support the “government’s vision of faster, more inclusive, and sustainable growth by emphasizing, *inter alia*, environmental sustainability, especially investments in water resources management and introduction of new technologies and low-carbon solutions.” The key sectors identified for support in implementing the strategy are energy, transport, and urban services (WUS).

55. More specifically, the CPS expects ADB to be able to “demonstrate solutions to the challenge posed by water scarcity and climate change.” While the CPS does not provide details as to how this would be done, this appears to be an important new direction in ADB’s ESG-related support in India, potentially moving beyond ADB’s traditional focus on infrastructure development, and needs to be monitored.

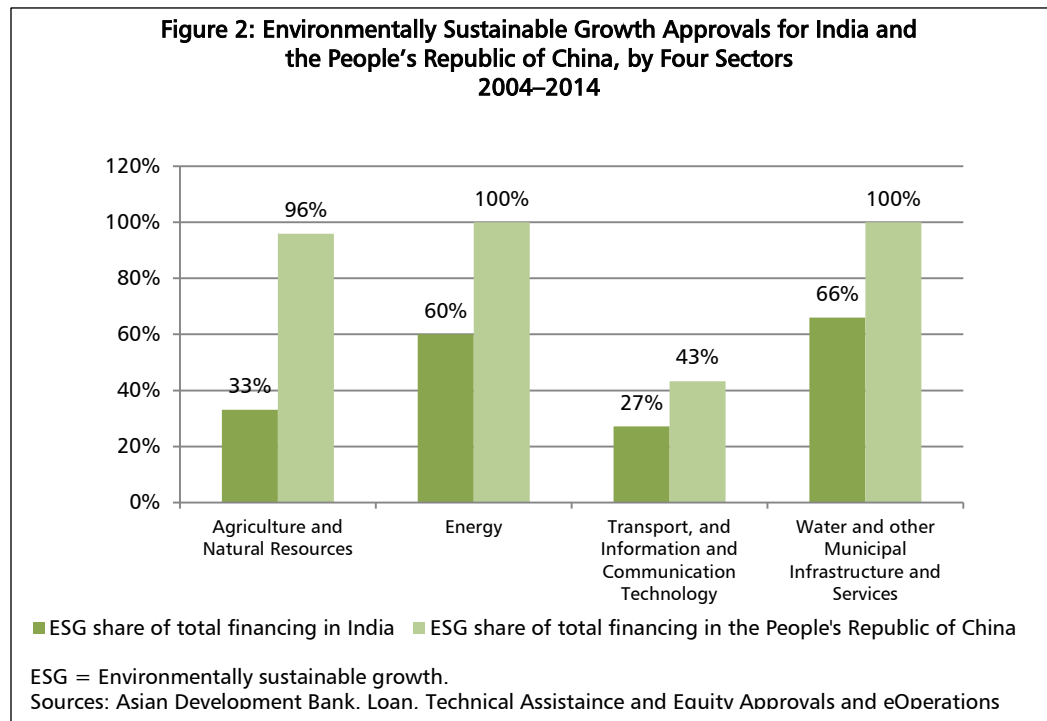
56. **Country partnership strategies for the PRC and India compared.** While the ESG-related content of the India CPS and the related project portfolio are more narrowly focused than those for the PRC, they clearly pay greater attention to ESG than in the past. Given that the PRC ESG portfolio is more mature, it is useful to see how differences in strategy translate into differences in the portfolio. Figure 2 compares the share of projects tagged as supporting ESG in the main sector programs for the PRC and India during 2004–2014. Consistent with the country’s needs and priorities as set forth in its CPS, India’s portfolio is focused on basic infrastructure (water and energy). On the other hand, the PRC portfolio in ANR, energy, and WUS is almost entirely tagged ESG with projects directly addressing land degradation and wetlands restoration, pilot clean energy projects, and integrated urban development. Even the transport program is becoming more environmentally sound in the PRC, as ESG-related projects have increased from just 4% of the sector portfolio in 2004–2008 to 81% in 2009–2014. This includes shifts to support rail and inland waterways. The now

⁵¹ ADB. 2015. *People’s Republic of China: Country Partnership Strategy 2016–2020*. Manila.

⁵² ADB. 2013. *India: Country Partnership Strategy 2013–2017*. Manila.

completed Lanzhou Sustainable Urban Transport Project,⁵³ approved in 2009, involved installation of a bus rapid transit system and was the first such operation ADB had supported anywhere in the region. It has since been followed by several others.

57. The India portfolio has a smaller share of projects tagged ESG, particularly in ANR, and its ESG-tagged transport projects are largely for roads. Of the ESG-tagged operations, those for energy are the largest in terms of financing and urban water projects are the largest in terms of number of projects, as there remains a large demand for access to energy and water. The ESG energy projects focus on energy efficiency and improving the national grid. One interesting innovation, however, is the \$100 million loan for the Gujarat Solar Power Transmission Project.⁵⁴ While this project does not finance the actual solar power generation plant, only the associated transmission lines, it is nevertheless an important enabling investment.



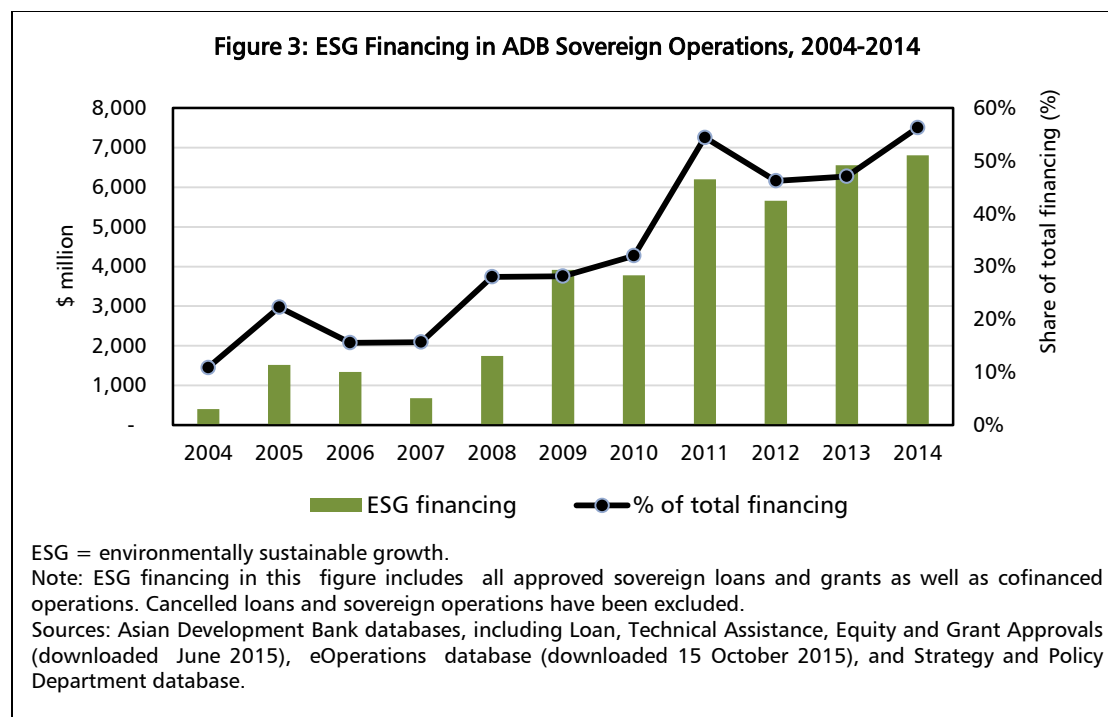
The growing prioritization of environmentally sustainable growth in Country Partnership Strategies has been matched by an increase in the share of ADB projects tagged as supporting ESG

C. Portfolio Trends and Tagging of Projects

58. The growing prioritization of environmentally sustainable growth in country partnership strategies has been matched by an increase in the share of ADB projects tagged as supporting ESG (Figure 3). Over an 11-year period, commitment amounts in ESG-tagged projects increased from less than 10% in 2004 to more than half of the total ADB portfolio in 2014. The number of projects tagged as supporting ESG has increased rapidly since the approval of Strategy 2020 in 2008, ranging from 10–22 approved projects per year in 2004–2008 to 27–52 projects in 2009–2014.

⁵³ ADB. 2009. *Report and Recommendation of the President for the Proposed Loan to the People's Republic of China: Lanzhou Sustainable Urban Transport Project*. Manila.

⁵⁴ ADB. 2011. *Report and Recommendation of the President for the Proposed Loan to India for the Gujarat Solar Power Transmission Project*. Manila.



Natural resource conservation and urban environmental improvement were the largest recipients of TA support

59. **ADB's support for ESG through technical assistance.** ADB's larger ESG loan and grant portfolio from 2009 onwards was matched by significant growth in technical assistance (TA) operations supporting ESG. As Table 2 shows, ESG-tagged TA operations more than doubled from \$515.5 million (45% of total TA operations) during 2004–2008 to \$1.1 billion (56% of TA operations) during 2009–2014.⁵⁵ Natural resource conservation and urban environmental improvement were the largest recipients of TA support by value during both periods, although their share of total ESG TA operations declined during the later period. Global and transboundary environmental concerns, disaster risk management, and environmental policy and legislation have in turn registered significant growth since Strategy 2020, a recognition of the importance of addressing environmental challenges in the region.

60. An operational review of safeguards in 2014⁵⁶ concluded that ADB had invested a lot of TA in assessing and improving country safeguards systems, including environmental safeguard systems through the preparation of draft legislation and by improving capacity, and also by assessing the systems' equivalence to ADB's safeguard policy, and countries' capacity to implement. The outcomes of TA focused on strengthening country safeguard systems are emerging slowly and are becoming more tangible over the years. Social and environmental-safeguard-related legislation is gradually aligning with international good practices in Bangladesh, Cambodia, Mongolia, Nepal, the Philippines, Solomon Islands, Sri Lanka, Timor-Leste, and Viet Nam. Relevant domestic legislation now applies to all projects in all sectors, regardless of whether they are assisted by ADB or not.

⁵⁵ The paper recognizes that the second period is longer. The intent is not to directly compare the absolute amount but rather highlight the changes in share to each ESG subcomponent over time.

⁵⁶ IED. 2014. *Corporate Evaluation Study: Safeguards Operational Review*. Manila: ADB.

Table 2: Technical Assistance Operations Supporting Environmentally Sustainable Growth, 2004–2014
(\$ million)

Subcomponent	2004–2008		2009–2014	
	Amount	Share (%)	Amount	Share (%)
Natural resources conservation	208.3	40.4	293.7	26.5
Urban environmental improvement	132.0	25.6	230.6	20.8
Eco-efficiency	61.5	11.9	125.7	11.4
Global and regional transboundary environmental concerns	36.2	7.0	176.2	15.9
Environmental policy and legislation	51.2	9.9	161.4	14.6
Disaster risk management	26.4	5.1	119.6	10.8
Total	515.5	100.0	1,107.2	100.0

Source: Asian Development Bank Operations Dashboard downloaded on 22 March 2016.

61. How significant is the recorded increase in the number of ESG-tagged operations? While progress has clearly been made, some of this may be more apparent than real, because when the PCS changed in 2009⁵⁷ it allowed for an increase in the number of thematic tags per project.⁵⁸ Operations that would not have been tagged for environmental sustainability before 2009 may have been tagged for this after the change in the PCS. ADB's staff instructions for the revised PCS of 2009 stated that the earlier classification had led to an underreporting of some key themes such as environmental sustainability.⁵⁹ Given the doubling of operations classified as addressing environmental sustainability in 2009 onwards compared with 2008 and before, together with subsequent increases, it can be concluded that the new classification rules have allowed operations with relatively limited environmental benefits and costs to be tagged as supporting environmental sustainability (in 2009–2014) or ESG (in 2014 and after). Yet, unlike the new climate change reporting system, the ESG reporting system allows the recording of an entire project as an ESG contribution even when the ESG budget is very small.

62. An exploratory review of ESG project documents shows that projects approved between 2004 and 2014 varied significantly in the nature and extent of their environmental activities and expected environmental benefits. IED reviewed the reports and recommendations of the President (RRPs) of 149 randomly selected projects out of 337 projects tagged as ESG (the list of projects reviewed is in Appendix 7).⁶⁰ The review adopted a notional scale in assessing the degree of a project's contribution to ESG. A project was assessed as *largely ESG* when ESG was a clear priority in the respective expected impact or outcome statements and/or the RRP allocated significant budget for environmental improvement. A project was marked as *partially ESG* when the RRP included the environment as a secondary outcome and when components explicitly supporting the environment were present. When the RRP's main intended outcomes were not environmental but included a small component or a number of activities with clear environmental benefits, the project was marked *marginally ESG*. It was marked *negligibly ESG* when there was extremely limited ESG content beyond the compulsory safeguards measures. Thus, the paper would consider these non-ESG.

A review of ESG project documents shows that projects varied significantly in the nature and extent of their environmental activities and expected environmental benefits

⁵⁷ The 2009 revision to the project classification system (PCS) aimed to correct the under-reporting of priorities (e.g., regional cooperation and integration and ESG).

⁵⁸ The 2009 PCS allowed each project to have a maximum of four thematic tags (one primary and three secondary). Previously a maximum of three had been allowed (and operations approved before 2004 were allowed a maximum of two).

⁵⁹ ADB. 2009. *Staff Instructions for the Revised Project Classification*. Manila. Appendix 1.

⁶⁰ The review considered trying to assign a monetary or percentage share of total project cost to the ESG component. This proved difficult and arbitrary as data were limited. Thus a more notional scale was used.

63. For example, urban mass transit projects with environmental sustainability as a major objective were considered *largely ESG*. ANR projects providing infrastructure that also incorporated some water efficiency and conservation components were marked *partially ESG*. Water supply projects giving minor support for conservation and/or waste water treatment were categorized *marginally ESG*. WUS projects that did not involve activities covering sewage treatment, solid waste management (i.e., water pollution control) or water conservation were considered *negligibly ESG*. Similarly, an energy project that financed transmission or distribution lines, but did not articulate any intended ESG-related outcomes—such as substantial increases in energy efficiency or connections with renewable energy sources to be added to the grid—was considered *negligibly ESG*. For a similar energy project to be tagged as marginal or greater in its *ESG* content, it would involve significant increases in energy efficiency or include energy generation from renewable energy sources (e.g., solar or wind plants) to be added to the grid.

64. While the number of projects tagged as supporting ESG has increased since 2008, the RRP review (summarized in Table 3) found that 31% (46 of 149 projects reviewed) were *largely ESG*, 41% (61 projects) were *partially ESG*, 17% (26 projects) were *marginally ESG*, and 11% (16 projects) were *negligibly ESG*.

65. Table 3 shows that, although most WUS projects in the sample were tagged ESG, only 28% can be categorized as *largely ESG*, meaning these are largely environmental projects. Over half (55%) of the agriculture projects have an ESG tag, but only 48% of these operations can be categorized as *largely ESG*. Similarly over half (56%) of the energy projects have an ESG tag with 45% of these being *partially ESG*. Only 31% of transport projects were tagged as ESG, and nearly half of them had limited environmental benefits. No sector program had a very high proportion of ESG-tagged projects that can be viewed as having significant environmental sustainability content. Most ESG tagged projects are predominantly oriented toward economic growth, with a range of additional features to make them more environmentally sustainable.

Table 3: Projects Tagged as Supporting Environmentally Sustainable Growth by Sector (%)

Sector Program	Projects Tagged by ADB as ESG	IED's Assessment of ESG-Tagged Projects			
		Largely ESG	Partially ESG	Marginally ESG	Negligibly ESG
ANR	55	48	33	18	0
Energy	56	32	45	13	10
Transport	31	23	31	20	26
WUS	80	28	45	18	10
Other	9	10	60	30	0
Total	36	31	41	17	11

ADB = Asian Development Bank, ANR = agriculture and natural resources, ESG = environmentally sustainable growth, IED = Independent Evaluation Department, WUS = water and other urban infrastructure and services.

Source: ADB project database and IED's review and reclassification of 149 randomly selected environmentally sustainable growth projects, approved between 2004 and 2014.

66. The way that ESG operations are currently tagged, combined with the previous “undertagging” of ESG before 2008, gives the impression of significant growth in ESG operations in recent years, when in practice the increase in ESG content was less significant. Projects with *partial* to *negligible* ESG content only make a limited contribution. Since 2009, road, energy transmission, and WUS projects have been increasingly tagged as supporting ESG. While parts of these projects may indeed support this objective, their actual environmental sustainability content remains limited in many cases.

The way that ESG operations are tagged gives the impression of significant growth ... when in practice the increase was less significant

67. Furthermore, the environmental subthemes currently available for tagging do not sufficiently capture the true nature of the ESG dimension of a project. These subthemes are an incomplete mix of subsectors (natural resources conservation, eco-efficiency, environmental policy and legislation, and disaster risk management) and spatial references (urban environmental improvement and global and regional transboundary environmental concerns). For example, there are road projects tagged with a natural resource conservation subtheme.⁶¹ This is probably because a more appropriate subtheme that would capture the true ESG dimension of the project, such as “sustainable infrastructure,” (a category in the EOD) is presently lacking. In this regard, the staff survey responses found that over half (52%) of staff (and only 40% of national staff, who often work directly with the tagging) agree that the current ESG subthemes sufficiently capture the actual environmental nature of ESG projects.

68. In addition, the PCS that was revised in 2014, and led to retrofitting of the earlier tagging to the latest categories, automatically tags all climate change projects with the global and regional transboundary ESG subtheme. However, many adaptation projects will have local benefits, rather than regional or global benefits. Some climate change adaptation projects may not be supporting ESG at all, e.g., water supply projects that access a different or additional source. IED’s climate finance evaluation in 2013⁶² also observed a lack of rigor in classifying projects, noting that projects have often been classified as supporting adaptation to climate change, even if the project documentation does not support this claim.

D. Proposed Environmentally Sustainable Growth Framework

69. ADB needs to articulate the extent and nature of its support for ESG more accurately. The percentage of ADB operations tagged as supporting ESG is approaching 60% (Figure 3) but there is a wide variation in the actual extent and nature of the support for ESG in such projects. This paper proposes a framework for differentiating and categorizing ADB’s support for ESG along subsector lines (Figure 4).⁶³ The proposal is intended as a starting point for a broader discussion as to how ADB can better classify and track its financing and technical support for ESG in a way that is more consistent with the priorities established in the EOD.

70. The proposed ESG framework would more accurately capture the actual range and types of ADB contributions to ESG and would be less cumbersome than trying to determine the monetary contribution of the environmental elements of a project. The proposed ESG framework has three pillars, like ADB’s inclusive growth framework, for classifying projects. These aim to capture the extent to which ADB-financed projects seek to provide environmental benefits. Such a framework would allow ADB to formulate measurable targets that can be easily monitored with a view to, for instance, increasing the share of pillar 1 and 2 projects by a certain percentage over a number of years.

71. **Pillar 1.** This includes projects with core environmental benefits that may not necessarily promote economic growth directly. It covers investment and TA operations whose essential purpose is to promote or enhance environmental quality and sustainability, such as investing in natural capital, a cleaner environment or strengthening environmental governance capacity. Core environment projects can also

ADB needs to articulate the extent and nature of its support for ESG more accurately

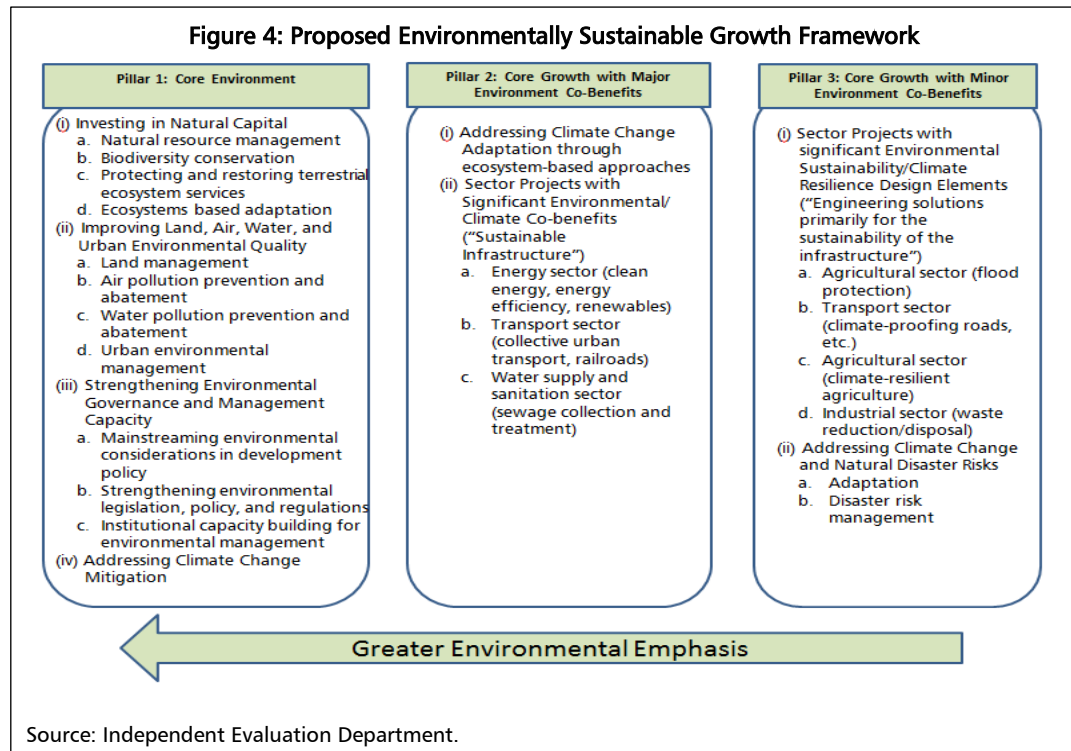
The proposed ESG framework would more accurately capture the actual range and types of ADB contributions to ESG

⁶¹ Forty percent of projects reviewed (60 of 149) had incorrect ESG subtheme classification

⁶² IED. 2013. *Real-Time Evaluation of ADB’s Initiatives to Support Access to Climate Finance*. Manila: ADB.

⁶³ The subsectors outlined in the framework are meant to be illustrative and not exhaustive.

directly improve local land, air, water, and urban environmental quality (including through dedicated sewage treatment investments and solid waste management projects). Investments dedicated primarily to mitigating GHG emissions are also considered to fall under pillar 1. Economic growth is not the primary explicit goal of core environmental projects although some or all may also be good for growth in the long run. Thus, transport or energy projects whose primary objective is to improve connectivity, energy generation, and/or distribution and economic development would not fall under pillar 1.



72. **Pillar 2.** These ESG projects primarily aim to support economic growth but have major environmental co-benefits (e.g., some sustainable infrastructure projects in the energy, transport, and water supply and sanitation sectors). Pillar 2 projects should have a major ESG or green growth component or components. Examples are solar panel projects, windfarm projects, urban transport projects, and irrigation efficiency improvement projects. Likewise, investments concerned with adapting to climate change and managing natural disaster risks (e.g., building resilience to natural disasters by incorporating ecosystems based adaptation) would fall under this pillar.

73. **Pillar 3.** This covers projects that are primarily concerned to support growth, often in key productive and infrastructure sectors, but have been made more environmentally resilient or sustainable. It would include projects with improved engineering design (or climate-proofing), as is the case for many road projects. The development and use of improved seed varieties and other technology-driven climate adaptation actions in agricultural projects would also fall under this pillar. Generally, pillar 3 are limited to projects with technical or engineering solutions that do not involve significant new investments for environmental improvement or protection but may have a small budget for special environmental actions.

74. **Safeguards.** A significant amount of ADB's work on the environment takes place through activities to implement its safeguard work and this is not captured in this framework. In many ways, safeguards are a major foundation of ADB's environmental work, as all projects are covered by the Safeguard Policy Statement.⁶⁴ Since this was issued in 2009, safeguard procedures have been elaborated in ADB's Operations Manual⁶⁵ and handbooks. Risk assessments are prepared before project approval and sometimes include EMPs for projects categorized as environmental category A or B. These EMPs support actions aimed at mitigation but at times can provide additional environmental benefits by influencing project design. The Safeguard Policy Statement also allows for SEAs (para. 31) that consider cumulative environmental impacts. These are important for planning. Likewise, safeguards and the corresponding TA projects for capacity building and policy development strengthen countries' environment policy environment as well as the capabilities of relevant government agencies. As the earlier discussed IED evaluation in 2014 corroborated, ADB has invested a lot in this area, and achieved good results (footnote 56). Thus, safeguard work is an instrumental part of ADB's overall support for the environment.

75. The proposed three-pillar framework should be viewed as a continuum. Pillar 3 projects could be turned into pillar 2 projects if further components or elements that provide greater environmental co-benefits are included. For instance, climate change adaptation projects could incorporate ecosystem- or landscape-based approaches rather than relying solely on engineering solutions. However, Pillar 2 projects would generally not become Pillar 1 projects as this would require fundamental changes to the project design from a growth to environmental orientation. Some complex multisector pillar 2 projects could however have elements supporting natural capital, cleanup of the environment, or improved environmental governance. Thus, it would be possible for ADB to increase the number of pillar 1 and 2 projects over time, while reducing the share of pillar 3 projects.

The proposed three-pillar framework should be viewed as a continuum

E. Developments in Four Sector Programs

76. ESG-tagged projects have been largely concentrated in four sectors: agriculture and natural resources, energy, transport, and water and other urban infrastructure and services. These sectors launched initiatives as far back as 2005 which have facilitated the increase in ESG investments that has been visible since 2008.

ESG-tagged projects have been largely concentrated in four sectors

77. Figures 5 and 6 show the share of ESG-tagged projects by sector approved before and after Strategy 2020 was issued. Over time, transport and energy projects have replaced ANR and WUS as the programs that account for the largest ESG shares in terms of commitment value. To better understand these shifts, a portfolio analysis of the primary subsector programs supported by ESG-tagged projects was undertaken. The top three primary subsectors are road transport, urban water supply, and electricity transmission and distribution. While these are indirectly related to the environment, they are often complemented by support for secondary subsectors that provide more explicit environmental benefits, particularly in the energy and water sectors.

⁶⁴ ADB. 2009. *Safeguards Policy Statement*. Manila.

⁶⁵ ADB. 2010. *Safeguards Policy Statement*. OM Section F1. Manila.

Figure 5: ESG Loans and Grants by Sector 2004-2008 (by Value)

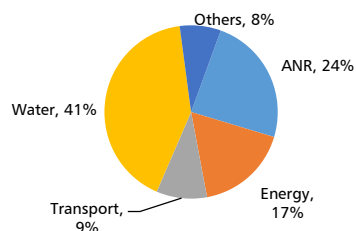
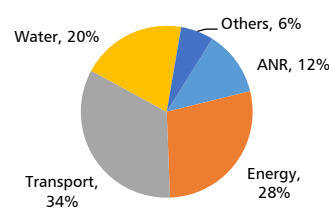


Figure 6: ESG Loans and Grants by Sector 2009-2014 (by Value)



ANR = agriculture and natural resources, ESG = environmentally sustainable growth.
Sources: Asian Development Bank. Loan, grant, technical assistance and equity approvals database and e-Operations database.

There has been a positive shift in the portfolio of the four main ESG sectors

78. The desk review corroborates the finding that there has been a positive shift in the portfolio of the four main ESG sectors, especially since Strategy 2020. This shift was most evident for investment projects whose primary focus was not the environment *per se* but sector development and where efforts had been made over time to add environmental benefits. While these projects may only be regarded as *partially ESG* or *marginally ESG*, the important point is that these projects incrementally increase ADB's positive contributions to environmental sustainability. They move ADB operations forward along the ESG continuum from *negligibly ESG* or *marginally ESG* to *partially ESG*. The staff survey results, however, were mixed, with 53% of all staff (and 40% of international staff) agreeing that project design had recently addressed ESG issues more explicitly. This divergence in staff perceptions may highlight the variation in progress towards integrating ESG elements across the different sectors. There may also be a lag between the increasing intention to become more environmental in the RRP and actual increased environmental benefits on the ground.

The PRC leads ADB countries in innovative approaches

79. **Innovative environmentally sustainable growth approaches.** The review also looked for innovative ESG approaches in ANR, urban transport, renewable energy, integrated water and urban development projects. It confirmed that the PRC leads ADB countries in innovative approaches and this appears to be largely country-driven (i.e., the PRC has requested greater support from ADB for ESG-related interventions as well as for more innovative approaches). Similarly, IED's TA evaluation in 2014⁶⁶ found that ADB's TA projects in the PRC have played a positive role in promoting innovation. ADB provided five TA projects for \$3.17 million to promote eco-compensation through support for the preparation of regulations, guidelines, institutional frameworks, and capacity development. This led to the creation of a knowledge hub on Green Growth and Eco-compensation in partnership with the PRC's National Development Reforms Commission.⁶⁷ The PRC's push for the use of ESG-related innovations in ADB-supported projects represents an important opportunity for ADB to develop experience in these areas, and some of the new approaches pioneered in the PRC (e.g., sustainable urban transport) are now being replicated elsewhere (e.g., in India, Pakistan, and Viet Nam).

Most energy projects do not support environmental sustainability directly

80. **Energy.** Most energy projects support the transmission and distribution of electricity. While most such projects do not support environmental sustainability directly (unless they were connected to a renewable energy source), all improve system efficiency and are essential for developing a viable electrical power grid system,

⁶⁶ IED. 2014. *Corporate Evaluation Study: Role of Technical Assistance in ADB Operations*. Manila. ADB.

⁶⁷ ADB. 2013. *Technical Assistance Report. People's Republic of China: Establishing a Regional Knowledge Hub on Green Growth and Eco-Compensation*. Manila.

including one capable of receiving variable electricity generated from renewable sources. On the other hand, the growth in this subsector has largely been offset by the decline in ADB support for large hydropower projects, which are an important source of renewable energy. More generally, many electricity projects approved over the past decade have been increasingly concerned with clean energy, energy efficiency or renewable energy in an effort to move away from fossil fuel, especially from coal-based generation, and to help reduce GHG emissions. Thus, even when ADB projects support coal-based generation, the projects are often tagged as energy-efficiency projects rather than as conventional energy projects. Importantly, the CO₂ emissions that have been avoided because of these operations are now being estimated by ADB. However, ADB is not estimating reductions in local air pollutants, especially in large urban areas, even though project impacts on local air quality are of critical importance for public health and economic productivity. These emissions should also be estimated.

81. Coal-based power generation and large hydropower projects constitute a small proportion of ADB's overall portfolio. One or two such projects were approved per year over the review period and the trend is downward. However, as countries aim to increase their variable renewable energy (VRE) penetration, grid stability can be a limiting factor. VRE (mainly solar and wind) will have to be accompanied by a ramping up of capacity and/or utility-scale storage for load balancing and grid stability. For as long as storage capacity for VRE remains limited or extremely expensive, this will require the power generation systems that provide base load power to become more efficient. Coal and large hydropower, two of the region's more contentious but heavily used power sources in some countries, are discussed in Box 1.

Coal-based power generation and large hydropower projects currently constitute a small proportion of ADB's overall portfolio

Box 1: ADB's Role with Coal and Large Hydropower

ADB has increasingly focused on transmission and distribution and renewable power generation. Its support for coal- and hydro-powered electricity generation has declined. Nevertheless, several Asian countries are planning to increase capacity in these areas.

Bangladesh, India, Indonesia, Pakistan, and Viet Nam are expected to increase their coal-fired power capacity substantially. In all these countries except Viet Nam, grid electricity is available to only about 60%–70% of the population and electricity services may be highly unreliable, resulting in large numbers of petroleum-fired back-up generators, which emit both conventional pollutants and greenhouse gases (GHGs), including black carbon. While natural gas is a better way of optimizing power plant efficiency and total pollutant loads, introducing supercritical coal-fired power plants may be more realistic in these countries. These plants emit about half of the CO₂/MWh of back-up diesel generators, when conventional pollutants, GHGs, and black carbon emissions are taken into account. Supercritical coal plants operating at 40% thermodynamic efficiency emit on average 0.83 tCO₂/MWh, more than double the emissions of combined cycle gas turbines (0.398 tCO₂/MWh) but a lot less than diesel units (1.39 tCO₂/MWh) and older coal units in developing countries (1.35 tCO₂/MWh).

Related to the rising concern for climate change, there is potential to increase countries' absorption of renewable energy solutions (mainly solar and wind) by improving the cycling capability of coal-fired power plants, resulting in cost savings as well as reductions in carbon dioxide (CO₂) emissions. Taking together the need for improved grid stability for variable renewable energy and the health impacts of existing back-up systems, it can be argued that there is a case for targeted support to improve the efficiency of existing coal-fired power plants in a few countries. This would require applying the best available technology, consistent with international norms such as the OECD guidance on export credit agency support for coal-fired generation, which will take effect in January 2017. Such an approach would also be consistent with the International Energy Agency (IEA) special report on energy and climate change, which included a phasing out of the least-efficient coal-fired power plants among its key actions to achieve early peaking of CO₂ by 2020.^a

Large hydropower with storage also has a role to play in the expansion of variable renewable energy. However, hydropower is more complicated than coal, because hydropower plants are custom designed and built to specific sites, and quantitative standards are generally lacking, other than ensuring they minimize their ecological impacts and maintain ambient water quality. Environmental and social damage is potentially significant but site-specific. In addition, large hydropower projects raise serious cross-boundary concerns about river flow and cumulative impacts, especially with the significant number of dams under construction and proposed for example on the main channel of the Mekong river. Despite these issues, there are established international guidelines and ADB has valuable experience in the sector.

Given the changing landscape with regard to coal based power generation, the complex and site-specific nature of large hydropower, and the declining participation of ADB in these areas, a review is warranted to establish how ADB, using policy dialogue, TA, and its lending program, can build on and use its position as a regional institution to assist countries in the short and medium term to increase generation capacity and move away from fossil fuels, support responsible development of hydropower, and demonstrate new technologies or approaches that address local air quality and climate change challenges, and increase renewable energy use.

ADB = Asian Development Bank, CO₂ = carbon dioxide, GHG = greenhouse gas, IEA = International Energy Agency, IED = Independent Evaluation Department, MWh = megawatt hours, OECD = Organisation for Economic Co-operation and Development, VRE = variable renewable energy.

^a IEA. 2015. *World Energy Outlook Special Report: Energy and Climate Change*. Paris.

Source: Independent Evaluation Department.

82. **Private sector operations and environmentally sustainable growth.** Although this paper focuses largely on ADB's public sector operations, a small but growing contribution to ESG energy projects comes from ADB's private sector operations. The Private Sector Operations Department (PSOD) had few transactions with explicit environment objectives prior to Strategy 2020 and the 2009 Energy Policy, but since 2009 PSOD has scaled up its focus on clean energy sources through investments in combined cycle gas plants⁶⁸ and renewable energy projects, reflecting the use of cleaner and more advanced technologies that will help countries achieve a lower carbon growth path.⁶⁹

The road subsector makes up the majority of transport projects tagged ESG

83. **Transport.** The road subsector makes up the majority of transport projects tagged ESG mainly due to the introduction of climate risk screening and climate proofing of projects and are tagged as ESG. In some cases, projects may have been wrongly tagged because of a lack of appropriate subthemes. Since 2013, road projects, like all other new ADB lending operations, have been subject to climate risk screening and vulnerability analysis, and increasingly also to climate-proofing, to make them more resilient to potential adverse climate effects, such as increased flooding and sea level rise. Some road projects have added small complementary components that go beyond environmental safeguards and climate proofing to support the environment. A road project in Inner Mongolia in the PRC⁷⁰ can serve as an example. While the project's budget dedicated to supporting a protected area is minimal, this investment nonetheless demonstrates how traditional economic growth-oriented projects can add some relevant environmental interventions. In some cases, projects may have been wrongly tagged because of a lack of appropriate subthemes (footnote 61).

84. The Sustainable Transport Initiative Operational Plan, adopted in 2010 identified the following priority areas of transport operations (i) scaling up urban

⁶⁸ Combined cycle gas plants use the cleanest fossil fuels and one of the most efficient energy sources.

⁶⁹ IED. 2013. *Thematic Evaluation Study: ADB Private Sector Operations Contributions to Inclusive and Environmentally Sustainable Growth*. Manila: ADB.

⁷⁰ ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China Inner Mongolia Road Development Project*. Manila.

transport; (ii) mainstreaming climate change and energy efficiency; (iii) improving cross-border transport and logistics; and (iv) supporting road safety and social sustainability.⁷¹ Consistent with the 2010 Sustainable Transport Initiative Operational Plan, steps have been taken to give greater emphasis to sustainable transport operations, including those for urban mass transport (e.g., bus rapid transit systems), railroads, and waterways. However, this depends on country demand. The PRC is a frontrunner in the demand for projects with environmental co-benefits in the transport sector, and it has reduced its interest in ADB support for inter-urban highways and other road projects, which do not support ESG and have few environmental benefits.

85. Over the past few years ADB has assessed the extent to which its own transport projects can be considered sustainable through its sustainable transport appraisal rating (STAR) system. STAR examines projects in terms of four dimensions: economic objectives, poverty and social objectives, environmental objectives, and risks to sustainability (Box 2).⁷² The list of ADB transport projects approved between 2012 (when STAR was first applied) and 2014 that were rated environmentally sustainable or moderately environmentally sustainable includes projects in Bangladesh, the PRC, India, Mongolia, and Viet Nam, to mention only those rated “environmentally sustainable.” The STAR system has now been developed into an online platform to help project officers assess transport projects against the methodology. While this initiative is small and voluntary, 28% of transport projects from 2012 to 2014 have been assessed to date. If STAR proves to be a good indicator of sustainability, it could be applied to all transport operations and similar approaches could be adopted in other sectors.

Box 2: ADB’s Sustainable Transport Appraisal Rating (STAR) System Methodology

1. The rater assesses project performance against each of 18 subcriteria for sustainable transport criteria and risk areas on a qualitative seven-point scale: (i) very strongly positive, (ii) strongly positive, (iii) moderately positive, (iv) neutral or not applicable, (v) moderately negative, (vi) strongly negative, and (vii) very strongly negative.
2. The project is then rated according to four core criteria: (i) economic, (ii) poverty and social, (iii) environmental, and (iv) risk to sustainability, using the same seven-point scale. The subcriteria for each (and their relative weights) are:
 - (i) economic (30%): (a) efficiency (people), (b) efficiency (businesses), (c) quality and reliability, (d) fiscal burden, and (e) wider economic benefits (regional, urban, rural).
 - (ii) Poverty and social (30%): (a) basic accessibility, (b) employment, (c) affordability, (d) safety, and (e) inclusion and social cohesion.
 - (iii) Environmental (30%): (a) greenhouse gas emissions, (b) transport-related emissions and pollution, (c) climate resilience, (d) natural and built environment, and (e) resource efficiency.
 - (iv) Risk to sustainability (10%): (a) design and evaluation risk, (b) implementation risk, and (c) operational risk.
3. Finally, the overall rating is derived by aggregating the core criteria scores and comparing the total with predefined thresholds: highly sustainable, sustainable, moderately sustainable, moderately unsustainable, unsustainable, highly unsustainable.

Source: Asian Development Bank Sustainable Development Working Paper No. 31.

The review found a number of ESG-relevant initiatives involving urban development that move beyond the traditional focus on water supply and sanitation

86. **Urban.** The portfolio review found a number of interesting ESG-relevant initiatives involving urban development that move beyond the traditional focus on

⁷¹ ADB. 2010. *Sustainable Transport Initiative Operational Plan*. Manila.

⁷² A. Véron-Okamoto and K. Sakamoto. 2014. *Toward a Sustainability Appraisal Framework for Transport*. ADB Sustainable Development Working Paper No. 31. Manila, January.

water supply and sanitation. A recently approved policy-based loan for air quality improvement in the Beijing-Tianjin-Hebei region is a clear example⁷³ of ADB engaging with the government on environmental policy issues. The PRC also has a new ADB-supported “sponge cities” initiative in which urban agglomerations use ecosystems-based adaptation approaches (greenways, parks and wetlands) to retain storm water and reduce flooding.⁷⁴

87. Attention to urban development or “livable cities” is occurring in other countries as well. There are “green cities”⁷⁵ projects in Viet Nam and climate-resilient urban development projects elsewhere in Southeast Asia and “smart cities”⁷⁶ in India.⁷⁷ SDCC is making broader efforts to enhance the integration of climate resilience into urban development programs and the Urban Sector Group is leading an initiative called “Future Cities.”⁷⁸ These activities support different approaches to multisector urban development and climate resilience, but all have interesting, innovative and, in many cases, common features (e.g., a focus on urban livability and resilience to climate change). Recognizing the differences across countries, there is merit in using the Urban Sector Group as a platform to share experiences and identify innovations and good practices about approaches to “livable cities,” or urban development and climate change, which could further optimize the investments made with the objective of making urban development more environmentally sustainable.

88. **Agriculture and natural resources.** Most of the ANR ESG-tagged projects that were reviewed were infrastructure-related. Often they address improvements to the efficiency of irrigation systems and reductions to climate-related risks (e.g., flood protection). Fewer projects are focused on introducing new agricultural production technologies or on-farm conservation (i.e., “smart agriculture”) activities through areas based on value chain approaches. There have been small increases in the number of projects supporting water-based natural resource management and forestry, but many more are needed. The ANR operational plan (approved in 2015) identified enhancing management and climate resilience of natural resources as a priority area and outlines future areas of support signaling a renewed focus on investing in natural capital.⁷⁹

89. **Biodiversity.** Although limited in number, there are good examples of initiatives that are core environment and directly support natural resource management, including the transboundary Core Environment Program in the GMS and its flagship Biodiversity Conservation Corridor Initiative, which covers neighboring areas in Cambodia, Lao People’s Democratic Republic, and Viet Nam; the Heart of Borneo

There are good examples of initiatives that are core environment and directly support natural resource management

⁷³ ADB. 2015. *Report and Recommendation of the President on a Proposed Loan to the People’s Republic of China: Beijing-Tianjin-Hebei Air Quality Improvement Program*. Manila.

⁷⁴ ADB. 2015. *Report and Recommendation of the President on a Proposed Loan to the People’s Republic of China: Jiangxi Pingxiang Integrated Rural-Urban Infrastructure Development Project*. Manila

⁷⁵ “Green” city development, following ADB’s Urban Operational Plan, issued in 2010, refers to interventions that follow a “3E” approach, which frames development in the context of economy (the competitive city), equity (the inclusive city) and environment (the Green City).

⁷⁶ Smart Cities is an urban renewal and retrofitting program by the Government of India with a mission to develop 100 cities all over the country making them citizen friendly and sustainable.

⁷⁷ ADB will target cities in seven states, where it already has operations in the urban sector.

⁷⁸ ADB. 2015. *Regional Technical Assistance: Establishing the Future Cities Program in the Asia and Pacific Region*. Manila.

⁷⁹ ADB will support (i) water resources improvement, protection, and integrated utilization, and coastal and marine resources management; (ii) land reclamation, reforestation, and watershed stabilization to reduce soil erosion and nutrient deficiency, and ensure the sustainability of forests and biodiversity; and (iii) enhancement of environmental and resource management standards and legislation, with overall emphasis on climate-smart investment to promote adaptation and mitigation, while targeting smallholders for sustainable yield and income increases. (Source: ADB. 2015. *Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020*. Manila).

Initiative, which includes Brunei Darussalam, Indonesia and Malaysia; and the multicountry Coral Triangle Initiative (para. 42). They also clearly demonstrate how ADB's strategic ESG and regional cooperation and integration objectives can be addressed simultaneously.

90. However, there are only a few transboundary biodiversity projects, partly because these projects often require long gestation periods, a medium- to long- term planning horizon, and strong country ownership and commitment. These programs require significant work upstream, from the planning stage onward because they take a long time to develop and implement, and once individual projects have been identified it is often too late to avoid issues such as biodiversity fragmentation. In the case of the GMS, for example, ADB supported this approach through a strategic environment framework, which has entailed a number of programs to identify biodiversity hotspots early on, so that they can be avoided in the overall infrastructure planning and implementation. Box 3 provides more information on the GMS Core Environment Program.

Box 3: The Greater Mekong Subregion Core Environment Program

The Greater Mekong Subregion (GMS) covers five Southeast Asian countries (Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam) and two provinces in the south of the PRC (Yunnan Province and Guangxi Zhuang Autonomous Region) that are part of the Mekong River Basin. The Core Environment Program (CEP), established in 2005, supports the GMS to deliver "environmentally friendly growth" and is part of the ADB's broader GMS Economic Cooperation Program. The CEP is overseen by the environment ministers of the six GMS countries.

The CEP is coordinated by the Environment Operations Center, which ADB established in 2005 and is based in the Thailand resident mission. The program has been implemented in phases, with financing from bilateral grants that now totals more than \$63 million provided by the governments of Finland and Sweden, the Nordic Development Fund, and the Global Environment Facility. The core areas of work of the CEP include assessing environmental challenges and opportunities, promoting environmentally sustainable planning, piloting innovation, and environmental monitoring. In addition, it operates a GMS environmental knowledge hub.

The flagship program under the CEP is the Biodiversity Corridors Conservation Initiative. This currently has four components: (i) environmental monitoring, planning, and safeguards; (ii) biodiversity conservation; (iii) climate change; and (iv) building institutions and financing for sustainable environmental management.

Building on the Biodiversity Corridors Conservation Initiative, a loan and grant-financed project, the Biodiversity Conservation Corridors Project, was approved in 2010 for \$69 million to Cambodia, the Lao People's Democratic Republic, and Viet Nam.

ADB = Asian Development Bank, CEP = Core Environment Program, GMS = Greater Mekong Subregion.
Source: Asian Development Bank. Greater Mekong Subregion: Statistics and Maps Notebook.
<http://www.gms-eoc.org/gms-statistics>

91. Despite these advances, there is a persisting need to invest in Asia's natural capital. ADB is doing this in only a few subregions (e.g., the GMS) and countries (e.g., PRC). Expanding and scaling up such activities will require ADB to reengage in areas such as forestry and fisheries, as well as to provide more support for ecosystem service provision and ecological management on a more integrated landscape basis than in the past. ADB also needs to focus on helping countries to build resilience and improve their preparations for extreme weather-related natural disasters.

ADB's lending targets for climate change mitigation and adaptation by 2020 are ambitious

92. ADB's lending targets for climate change mitigation and adaptation by 2020 are ambitious. This means that its support to countries in these areas will have to be significantly expanded. The same is true for ADB support for clean energy, energy efficiency, renewable energy, and sustainable transport investments. Perhaps the most significant challenges for ADB in the years ahead will be to more actively engage in country policy dialogue in these areas from the CPS preparation stage onward, and to upgrade its capacity to deliver well-prepared projects that go beyond the traditional concentration on energy, roads, irrigation, and urban water supply and sanitation to more comprehensive, integrated or multisectoral, and spatially-focused approaches.

F. Tracking Climate Change Mitigation and Adaptation Support

93. At the Rio+20 conference, the MDBs, including ADB, agreed to work towards a common approach to track and report on climate finance.⁸⁰ Since 2012, they have been preparing joint reports on adaptation and mitigation finance activities. While variations in reporting and counting climate finance across institutions remain, progress has been made in harmonizing and improving approaches. This is important as staff have expressed a need for more guidance on quantifying climate finance.

94. The 2014 report showed that the MDBs committed over \$28 billion to climate action in developing and emerging economies, bringing total commitments during the past 4 years to over \$100 billion.⁸¹ Of the MDB financing for climate change-related activities in 2014, 82% was for mitigation, with the remaining 18% for adaptation.⁸²

From 2011 to 2014, ADB's annual climate finance commitments remained stable

95. From 2011 to 2014, ADB's annual climate finance commitments remained stable, averaging about \$3.1 billion per year. Climate-change-related activities accounted for 18% ADB's financial commitments in 2014, as compared with 22% for the MDBs as a whole. Only components for climate change action within project budgets are counted, not the whole project budget, as with ADB's ESG-tagged operations. ADB's \$2.86 billion commitment in 2014 was about 12% of the total MDB commitment for climate finance. Of ADB's commitment, \$2.14 billion (75%) was for mitigation, and \$0.72 billion (25%) for adaptation (Figure 7).

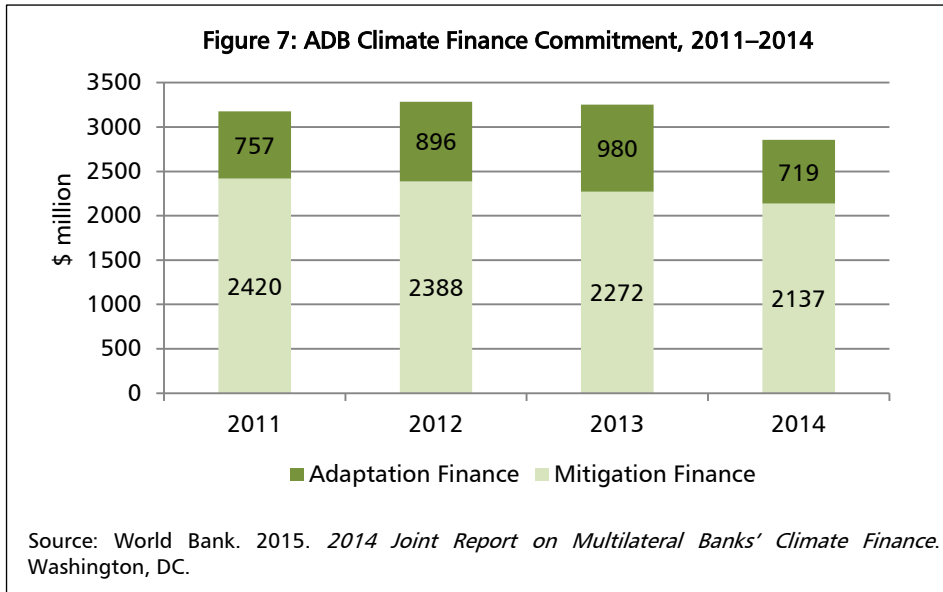
96. The Climate Change Thematic Group reported to ADB management that ADB's preliminary commitments for climate finance in 2015 totaled \$2.68 billion, slightly below those during the previous year. Of this, \$2.40 billion was for mitigation and just \$0.28 billion was for adaptation (a lower figure than in previous years).⁸³ In part this reflects improvements in tracking and reporting adaptation finance (i.e., ensuring that only the relevant activities are included) and means there can be increased confidence in the adaptation finance numbers now being reported.

⁸⁰ The MDBs are: African Development Bank (AfDB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), Inter-American Development Bank (IDB), the World Bank (WB) and the International Finance Corporation (IFC).

⁸¹ World Bank. 2015. *2014 Joint Report on Multilateral Banks' Climate Finance*. Washington, DC.

⁸² This mitigation and adaptation financing has supported policy changes and investments that have, for example, improved agriculture and landscape management, made coastal and riverine infrastructure more resilient, improved the efficiency of water use and water management in cities and industries, and supported community-driven adaptation activities. The investments have ramped up mitigation efforts through energy efficiency, renewable energy and support for lower-carbon transport options.

⁸³ ADB. 2016. *Thematic Group 2016 Work Plan Presentation to Management*. Climate Change and Disaster Risk Management Thematic Group. Manila.



97. Within ADB, SDCC has been monitoring climate finance activities in its reporting for the joint MDB report on climate finance. The 2014 data set identified 29 investment projects and 28 TA operations for mitigation and 30 investment projects and 19 TA projects for adaptation.

98. The 2014 data indicate that a large number of projects are likely to benefit from ADB climate change finance. However, many of the investment components, particularly for climate adaptation, are relatively small (\$1 million–\$3 million),⁸⁴ suggesting that these funds are primarily to climate-proof infrastructure investments. This is consistent with the findings of two recent IED evaluations, which found that ADB's climate change portfolio is largely focused on mitigation through clean energy⁸⁵ and that adaptation interventions were mainly to climate-proof investment projects (footnote 15).

99. An example of a large adaptation project is the multitranche financing facility for the Bangladesh Flood and Riverbank Erosion Risk Management Program,⁸⁶ involving an expected total adaptation commitment of \$222 million (over three tranches) out of a total of \$255 million in ADB financing. The first tranche for \$65 million was approved in July 2014 to finance the construction of riverbank revetments, which protect vulnerable riverbanks and assets, and flood-related enhancements behind the riverbanks to combat progressive erosion.⁸⁷ A key innovation in this project is the use of cost-effective sand-filled geotextile bags for riverbank erosion mitigation. This technology has been replicated in other projects in Bangladesh and South Asia.⁸⁸

Many of the investment components, particularly for climate adaptation, are relatively small

⁸⁴ Appendix 8 provides a listing of ADB commitments to investment projects for climate change adaptation and mitigation.

⁸⁵ IED. 2014. *Real Time Evaluation of ADB Initiatives to Support Access to Climate Finance*. Manila: ADB.

⁸⁶ ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Multitranchise Financing Facility People's Republic of Bangladesh: Flood and Riverbank Erosion Risk Management Investment Program*. Manila.

⁸⁷ ADB. 2014. *Project Data Sheet for the Bangladesh: Flood and Riverbank Erosion Risk Management Investment Program*. Manila. July, pg. 2.

⁸⁸ IED. 2016. *Thematic Evaluation Study: Effectiveness of ADB Partnerships*. Manila: ADB.

100. Bangladesh had the highest number of new projects (four) with some financing for adaptation in 2014, followed by Bhutan (three projects), while India, Nepal, Solomon Islands, Sri Lanka, and Viet Nam had two projects each. The PRC, with six projects, predominated on the mitigation side, followed by India and Viet Nam with five projects each, while Nepal had two.

G. Environmental Governance and Capacity

Environmental governance is an integral part of ADB's environmental and climate work

101. Environmental governance is an integral part of ADB's environmental and climate work. The EOD lists environmental governance, including the strengthening of country environmental safeguard systems, among its principal actions. ADB approved 15 TA projects totaling about \$26 million to strengthen country environmental safeguard systems since 2009 until mid-2014 (footnote 56). IED's ongoing safeguards evaluation is currently reviewing ADB's support to country safeguard systems and has case studies for Indonesia, the Kyrgyz Republic, and Sri Lanka (footnote 28).

102. Across the main ESG sectors, environmental governance-related TA projects also support capacity development. For example, a TA in Nepal is supporting an institutional and legal framework for improved water management systems and the formation of the Bagmati river basin organization.⁸⁹ In 2010, an ADB TA assisted in the preparation of specific studies to help operationalize India's National Water Mission in the National Action Plan for Climate Change.⁹⁰ Following this work, ADB is processing an investment program for the Cauvery Delta in Tamil Nadu to support the government institutions and systems to improve integrated water resource management and help local communities adapt to climate change.

103. **Regional organizations could be used to promote better environmental governance and capacity.** IED's ADF evaluation in 2015 proposed providing a portion of ADF grant resources to regional organizations that are undertaking work that supports ADF priorities, such as strengthening disaster risk reduction or environmental governance.⁹¹

104. **ADB has facilitated twinning arrangements and partnerships to share information.** Recognizing that "seven out of 10 cities in developing Asian countries have unhealthy levels of air pollution," ADB approved a regional TA in 2014 with the aim of enhancing the capacity of the beneficiary cities to manage urban air quality. Its expected outcomes are increased application of knowledge and understanding of air quality management by 10 beneficiary city governments⁹² together with recommendations for improvement. South-South twinning arrangements would then be established to share air quality management experiences and good practices among cities of a similar size, covering up to four Asian countries.

105. Similarly, ADB has developed a Water Operators Partnerships initiative in Asia,⁹³ a water utility twinning program. This program provides cost-effective knowledge sharing and capacity building to enable utilities to operate, maintain, and manage their

⁸⁹ ADB. 2013. *Proposed Loan, Grant and Administration of Technical Assistance Grant: Bagmati River Basin Improvement Project*. Manila.

⁹⁰ ADB. 2013. *Climate Adaptation in Vennar Sub-basin in Cauvery Delta Project*. Manila.

⁹¹ IED. 2015. *Thematic Evaluation Study on ADF X-XI Operations*. Manila: ADB.

⁹² ADB. 2014. *Technical Assistance Report: Mainstreaming Air Quality in Urban Development through South-South Twinning*. Manila.

⁹³ ADB. 2014. *Water Operators Partnerships, Twinning Utilities for Better Services*. Manila.

assets in a sustainable way, and to deliver continuous service improvements. Since 2007, ADB has facilitated over 40 water utility partnerships.

H. Environmentally Sustainable Growth Project Ratings

106. ADB's ESG-tagged projects in the four main ESG sectors were more successful than non-ESG projects. Table 4 presents success rates based on ratings of project completion report validation reports (PVR) and project performance evaluation reports (PPER)⁹⁴ for 332 non-ESG-tagged projects and 69 ESG-tagged projects, circulated from 2004 to 2014. The table shows that a higher percentage of the ESG-tagged projects were successful. This is particularly true for the ANR and water projects, which made up most of the evaluated projects. However, the higher success rate of ESG-tagged projects in these sectors may not be representative, given that many projects with PVRs or PPERs are in countries with better performance records, such as the PRC. However, even when PRC projects are excluded, ESG-tagged projects still have higher success rates across the four main sectors. This suggests that environmental sustainability measures do not come at the expense of project success, and may actually contribute to their success.⁹⁵ IED's planned 2018 ESG evaluation will explore project performance in more detail.

ESG-tagged projects in the four main ESG sectors were more successful than non-ESG projects

Table 4: Environmentally Sustainable Growth Project Success Rates, 2004–2014

Sector	All ADB Developing Member Countries				Without PRC			
	Non-ESG		ESG		Non-ESG		ESG	
	All Rated Projects	Projects Rated Successful (%)	All Rated Projects	Projects Rated Successful (%)	All Rated Projects	Projects Rated Successful (%)	All Rated Projects	Projects Rated Successful (%)
ANR	63	57	32	72	62	56	27	67
Energy	28	61	8	100	26	58	1	100
Transport	92	71	4	75	71	63	4	75
WUS	29	48	19	79	28	46	12	67
Others	189	59	6	67	189	59	4	50
Total	401	61	69	77	376	59	48	67

ADB = Asian Development Bank, ANR = agriculture and natural resources, ESG = environmentally sustainable growth, PRC = People's Republic of China, WUS = water and other urban infrastructure and services.

Note: Ratings are used from project performance evaluation reports (PPER), otherwise from project completion report validation reports (PVR).

Source: Independent Evaluation Department.

107. ANR and WUS had the highest number of ESG projects rated *highly successful* or *successful* making it possible to consider evaluation lessons from these projects. Many of the ANR projects were built on complementarities and had a spatial dimension, but they were not themselves necessarily multisectoral. Such projects often focus on key constraints to improve market efficiency and incorporate a greater mixture of community participation, private sector involvement, and institutional capacity building. The community participation dimension often includes the introduction of conservation practices and new technologies, which complement investments in irrigation, improving water use efficiency and provide other benefits to the environment.

⁹⁴ ADB project performance ratings are provided both by operations through self-evaluated Project Completion Reports (PCRs) and independently from IED through project completion report validation reports (PVRs) and project performance evaluation report (PPERs).

⁹⁵ A test of proportions indicates a significant difference between success rates of ESG and non-ESG projects.

108. A main finding from the successful water projects was that these projects can contribute to both inclusive and environmentally sustainable growth but they often face complexities that slow project implementation. This is particularly true when water components are integrated with other urban priorities. These more complex urban programs may require a phased approach and support over a longer time. The small number of energy projects that were reviewed highlighted the importance of innovation and the demonstration effect of introducing new technologies and approaches. A synthesis of evaluation lessons from ESG-tagged projects is in Appendix 9.

CHAPTER 4

Moving the Agenda Forward

109. ADB has paid increasing attention to environmentally sustainable growth over the past decade, particularly since Strategy 2020 was issued. However, given the region's daunting challenges, including continued population growth and increasing urbanization, and the adoption of the SDGs and the Paris Agreement on climate change, the need to address environmental concerns and climate change has never been more urgent. ADB's support and expertise need to be scaled up (and is being scaled up) to meet the new challenges and anticipated growing demand from ADB countries. The recently established AIIB and NDB BRICS will provide additional financing for infrastructure, providing ADB with an opportunity to strengthen its comparative advantage. It can build on its experience in the environment and climate change, differentiating it from these new institutions and positioning it to attract additional cofinancing for projects that respond to environmental and climate change challenges.

110. The SDGs and Paris Agreement have raised the profile of ESG issues and highlighted the seriousness and breadth of the environmental sustainability challenges currently faced by the Asia and Pacific Region. No country is immune from climate change, and no country can take on its interrelated challenges, sources, and impacts on its own. Policy makers are increasingly aware that droughts, floods, and other extreme weather events can be extremely costly. Climate change, in fact, threatens to deepen existing vulnerabilities and make efforts to reduce poverty more difficult.

111. Responding to these challenges requires a major shift in the conventional development paradigm and a transition to a low-carbon growth path as rapidly as possible. While this is generally agreed in principle, neither the SDGs nor the Paris Agreement provide sufficient insight into how this can be achieved, while many developing countries remain ambivalent because of concerns that this transition would be at the expense of economic growth and shared prosperity. To support its member countries, ADB needs to clarify how it will change as an institution so it can improve its support for the investments, technologies, and policy and institutional changes required to respond to increasing regional and country-specific environmental and climate challenges.

112. **The ADB President's pledge to double total ADB lending for climate-change-related activities will move climate change and the environment even further to the center of its development assistance agenda.** Over the past few years, ADB has provided valuable technical, financial, and operational support to countries and guidance to its own staff and other interested stakeholders with respect to the integration of climate change considerations and risk management into its lending operations. This process should be reviewed to learn and refine the process.

113. Actual lending volume for climate change has not significantly increased since 2011, and in fact fell slightly in 2014 relative to previous years. Preliminary data for 2015 suggest a further decline in support for climate change adaptation. Achieving the President's pledge will be a daunting challenge. A substantial scaling up of ADB's operations is needed, particularly with respect to adaptation, across all of the pertinent

The SDGs and Paris Agreement have raised the profile of ESG issues and highlighted the seriousness of the challenges

Responding to these challenges requires a shift to a low-carbon growth path as rapidly as possible

sectors, including ANR. The good news is that most staff (about two-thirds of all respondents to the survey) are confident that their programs can do more to meet the President's climate change commitment. However, this will ultimately also depend on significantly scaled-up country demand for ADB support in this and other ESG-related areas.

Substantial scaling-up is needed

114. **Substantial scaling-up is needed to make good on the Environment Operational Direction's objective to markedly increase investments in natural capital, including in forestry and fisheries.** Some countries may be reluctant to borrow at OCR terms for these and other environmental priorities. Where ADB has been successful in supporting primarily environmental objectives, partnerships, TA and concessional resources were the instruments of choice for building government commitment and introducing innovative approaches, which can later be replicated and scaled up. These instruments will even be needed in middle income countries.

115. **ADB needs to approach environmentally sustainable growth challenges more holistically.** Given the multidimensional nature of many environmental problems, in both rural and urban contexts, ADB needs to develop more interventions that integrate sector-specific work. It needs to move from its traditional sector-specific approach to a more integrated, and spatially-oriented projects. IED's evaluation of ADB's urban work in 2006⁹⁶ made it clear that, because of the close interrelationship of urban issues, there is a need to address urban problems with a holistic rather than a sector-by-sector approach. ADB management and staff recognize this, as indicated by the various recent and emerging approaches to climate-resilient urban development (e.g., "green cities") mentioned in Chapter 3. Experiences, challenges, and lessons from these internal multispectral and climate-sensitive urban initiatives should be shared widely in ADB. Furthermore, this approach can be systematically extended to rural areas as well.

A more integrated and spatially focused approach is needed

116. A more integrated and spatially focused approach is needed for greater development effectiveness. Such an approach not only meets the reality of the way human and economic activity is organized, it also acknowledges that environmental problems, including both local pollution and GHG emissions, are negative spatial externalities. Environmental benefits are public goods, whether at urban, rural, national, regional, or global levels. If ADB is to scale up its interventions for climate change adaptation effectively, it needs to invest in making vulnerable agricultural activities, infrastructure, ecosystems, coastal and other low-lying areas, and cities of all sizes more resilient. Greater attention needs to be given to the economic, social, and environmental links between rural and urban areas. ADB has only a few, highly recognizable subregional programs, such as the GMS Core Environment Program and the Coral Triangle Initiative; it is well positioned to increase these. However, such an integrated approach may require a longer-term time horizon, as working effectively across spatial areas is potentially more complex and may require a series of interventions, as well as new instruments and more substantive partnerships.

117. To facilitate a more spatial focus, ADB needs to strengthen collaboration across sectors and to enhance the sharing of information and experience across regional departments. With the establishment of the new sector and thematic groups, there are more opportunities for better internal communication and cooperation.

118. **There is an opportunity to learn from recent ADB-supported innovations across all four of the main environmentally sustainable growth sectors.** Successful projects in

⁹⁶ IED. 2006. *Urban Sector Strategy and Operations*. Manila: ADB.

ANR, energy, transport, and WUS can provide models that can be used to shift ADB's future portfolio more toward ESG. ADB has supported or is supporting an increasing number of ESG-related projects in numerous countries involving various aspects of the environment, such as urban air pollution management through a policy based loan, and a lake and wetland rehabilitation in the PRC, as well as some of the urban environment-related projects in the GMS that need to be more widely disseminated within ADB and replicated in other countries.

119. **ADB's experience in the PRC offers a number of lessons and insights for future ADB operations in other countries.** It provides examples of how demonstration projects can introduce new technologies and how ADB support can assist sector-based operations transition to become more "green," as new technologies and approaches are introduced and then mainstreamed across the portfolio. ADB's experience in the PRC also highlights the important role of TA and policy dialogue with the government in developing an innovative country program. Finally, staff skills and the knowledge gained in working on these innovative projects may be applied and adapted to ADB programs in other countries.

ADB's experience in the PRC offers a number of lessons and insights

120. **ADB knowledge products on the environment, climate change, and other aspects of environmentally sustainable growth need to be made more relevant to ADB's future lending operations, if they are to add significant value.** Flagship products or a series of knowledge products on particular sectoral or thematic issues would be an important first step in this direction. For example, ADB has published a number of useful publications on both green growth and rural and urban climate resilience. In terms of priority setting, the new country knowledge plans provide an opportunity for ADB to identify areas for knowledge generation that are relevant to helping its member countries achieve the new SDGs. There is a need to raise awareness and promote wider use of the K-Nexus, ADB's knowledge products and services database, which was launched in 2015. While K-Nexus is useful to inform staff of the universe of ADB knowledge products, the next step could be to identify and better disseminate the best knowledge products.

121. **ADB has laid a foundation that will enable it to become the environmental sustainability bank for the region.** It has an opportunity to build on a number of environmentally innovative projects across the four main ESG sectors and to capitalize on the higher success rates for ESG projects. However, much work is needed to scale up the ESG portfolio and to integrate environmental concerns into other areas more effectively.

ADB's environmental strategy documents should provide greater clarity and strategic guidance

122. **ADB's environmental strategy documents should provide greater clarity and strategic guidance.** ADB should publish operational guidance to support and encourage greater innovation and mainstreaming of environmental concerns. The EOD elaborates upon and expands on Strategy 2020, but it remains a relatively low-level document. ADB's definition and conceptual framework for ESG has not been clearly articulated in operational terms, as was confirmed in the staff survey undertaken for this paper. This is in contrast with the other two Strategy 2020 strategic agendas, inclusive growth and regional cooperation and integration, both of which have clear guidelines.⁹⁷ ADB should continue to integrate environmental and climate change concerns into its sector

⁹⁷ See, for example, ADB. 2013. *Guidelines on Inclusive Economic Growth in the Country Partnership Strategy*. Manila, and ADB. 2006. *Regional Cooperation and Integration Strategy*. Manila. The latter includes four "pillars" including one for cooperation in regional public goods such as clean energy and environmental protection. See also, IED. 2015. *Asian Development Bank Support for Regional Cooperation and Integration*, Thematic Evaluation Study. Manila: ADB. Figure 10, p. 15.

operational plans as they are revised. In the specific case of the energy sector, this would, by extension, permit clarification of ADB's position on supporting coal use and other GHG-emitting and natural-resource-depleting activities, as well as on large hydropower development.

ADB needs to track its contributions to ESG more accurately

123. At the corporate level, ADB needs to articulate and track its contributions to ESG more accurately. In this regard, the paper proposes a possible ESG framework for ADB's consideration. This would classify projects under three categories in terms of their ESG orientation and content: (i) core environment operations, (ii) core growth operations with major environmental co-benefits, and (iii) core growth operations with minor environmental benefits (projects made more environmentally sustainable primarily through engineering solutions, e.g., climate-proofing). The challenge for ADB is to gradually increase the proportion of type (i) projects and to transform more type (iii) projects into type (ii) by increasing their environmental elements and co-benefits.

124. The recent CPS reforms mean that a CPS will no longer have a stand-alone environmental assessment. ADB will need to ensure that environmental considerations are still adequately and appropriately integrated into CPSs, sector plans, and country work programs as the CPS will be ADB's main entry point for assisting countries in meeting their SDG and Paris Agreement commitments. To do this, ADB could consider strengthening the environmental objectives within CPSs or introducing selective environmental quality and sustainability targets. At the project level, better alignment between the EOD priorities and the ESG subthemes in the PCS would provide greater clarity in terms of the specific environment-related contributions of individual projects.

ADB is well positioned to mainstream environmental concerns into its traditional core infrastructure work

125. Strategic environmental assessment (SEA) is increasingly used in ADB operations, notably in the GMS where it has been used effectively in energy sector and land use planning. SEA can benefit project design and environmental outcomes by providing a higher level assessment through a multistakeholder participation process that takes into account cumulative impacts across sectors and geographical areas. Ultimately SEA can better inform policy makers and planners of the impacts and trade-offs of particular development options in order to minimize adverse impacts on environment and society. Similarly, safeguard environmental risk assessments and environmental management plans may provide an opportunity to further integrate environmental benefits into project design.

ADB also needs to increase its support for other priority environmental concerns

126. **ADB is well positioned to mainstream environmental concerns into its traditional core infrastructure work by integrating greater environmental co-benefits into such projects.** ADB's ability to further its evolving ESG agenda will be enhanced if it can work more effectively with existing MDBs and new players such as the GCF, AIIB, and the NDB BRICS. The preparation of the MDB joint climate reports would be a good forum to improve and harmonize definitions, approaches, and methods for estimating and measuring contributions to adaptation. For ADB's new partners, an agreed-upon and mutually beneficial division of labor driven by each player's comparative advantages will need to be found. ADB's broader development mandate positions it well to provide the kind of platform needed to generate the strong climate and environmental interventions and benefits required by countries in the region in the 21st century.

127. **While ADB's increased focus on climate change will deliver many direct and indirect environmental and other benefits, it also needs to increase its support for other priority environmental concerns.** The region faces many environmental challenges that are not directly related to climate change and that have a greater present impact on

human welfare and especially on that of the poorest. These ESG priorities also require greater ADB engagement, especially for those projects that may involve environmental damage such as indoor and outdoor air pollution, water stress, renewable natural resource degradation, and biodiversity loss. In its growing efforts to help its member countries in Asia and the Pacific meet their climate change mitigation and adaptation challenges, ADB must not lose sight of the need to assist them with these other pressing environmental priorities, and to ensure that it has the financial and human resources to do so effectively.

Appendixes

APPENDIX 1: PRINCIPAL ENVIRONMENTAL CHALLENGES IN THE ASIA AND PACIFIC REGION IDENTIFIED IN KEY ADB POLICY AND STRATEGY DOCUMENTS

Environment Policy (2002)	Medium-Term Strategy II (2006)	Strategy 2020 (2008)	Environment Operational Directions (2013)
Urban air pollution	Finding a balance between growth in order to reduce poverty and its adverse impact on the environment	Rapid economic growth is severely stressing the environment	Climate change
Water pollution	Changing energy use patterns, helping countries acquire low-carbon technologies and implement energy efficiency, and renewable energy on a “no regrets” basis	Approaches to economic growth need to be altered to address environmental degradation	Food, water, and energy security
Municipal and industrial solid waste	Improving urban water supply, sanitation and waste, including solid waste, management in the wake of rapid urbanization	Environmental damage and resource depletion from fast growth are impeding development and reducing quality of life	Rapid urbanization and industrialization
Land degradation	Adopting efficient urban transport systems to contain air pollution	Without greater effort to safeguard the environment, pressure will continue to build on land, forests, water systems, wetlands, marine ecosystems, and other natural resources and urban centers will also suffer	Natural resource degradation and loss of biodiversity and ecosystem services
Deforestation	Helping to contain the loss of forest cover, using a river basin and/or landscape approach		Environmental governance
Biodiversity loss	Ensuring that ADB projects do not adversely affect forest capital and biodiversity resources		
Coastal, marine, and freshwater aquatic resources	Revisiting provisions for rehabilitation and reconstruction after natural disasters		
Climate change			

ADB = Asian Development Bank.

Source: Independent Evaluation Department.

APPENDIX 2: PRINCIPAL ENVIRONMENTAL ACTIONS IN THE ASIA AND PACIFIC REGION IDENTIFIED IN KEY ADB POLICY AND STRATEGY DOCUMENTS, 2002–2013

Environment Policy (2002)	Medium-Term Strategy II (2006)	Strategy 2020 (2008)	Environment Operational Directions (2013)
Promote environmental interventions to reduce poverty	Manage and/or protect the environment	Promote environmentally sustainable growth (one of three “strategic agendas” with “environment” as one of five “core areas”)	Promote environmentally sustainable growth, i.e., green growth
Mainstream environmental considerations in economic growth	Promote environmentally sustainable growth and/or “green growth”	Address climate change	Promote a shift to sustainable infrastructure
Maintain global and regional life support systems		Promote livable cities	Invest in natural capital
Build partnerships		Undertake complementary actions: mainstream environmental considerations in country policies and interventions	Strengthen environmental governance and management
Integrate environmental considerations into ADB operations			Respond to the climate change imperative

ADB = Asian Development Bank.

Source: Independent Evaluation Department.

APPENDIX 3: HOW DO MULTILATERAL INSTITUTIONS DEFINE ENVIRONMENTALLY SUSTAINABLE GROWTH?

1. The evolution of environmental concepts and terminology, including the ever-increasing emphasis on climate change and low-carbon development, has been a characteristic of multilateral institutions in recent years. Before and after the United Nations Conference on Sustainable Development (Rio+20) in June 2012 a number of institutions began clarifying their positions on environmental sustainability. In particular, some attempted to clarify the terms *green growth* and *green economy* as well as how they intend to support them.

2. The World Bank, for example, offers the following definition: “green growth can be thought of as economic growth that is environmentally sustainable. More specifically, it aims to operationalize sustainable development by enabling developing countries to achieve robust growth without locking themselves into unsustainable patterns.”¹ It considers *green growth* jointly with inclusive growth rather than in parallel—under the heading “inclusive green growth”—and sees both as key elements of sustainable development.

3. In addition, the World Bank Group’s current environment strategy defines *green growth* as “growth that is efficient, clean, and resilient—efficient in its use of natural resources, clean in that it minimizes pollution and environmental impacts, and resilient in that it accounts for natural hazards and the role of environmental management and natural capital in preventing physical disasters.” According to this strategy, the focus of the World Bank’s green agenda is on “nurturing greener, more-inclusive growth and poverty reduction while protecting biodiversity and ecosystems.” *Clean growth* is focused on “helping countries to manage pollution proactively and find low-emission paths to development.” And *resilient growth* involves “working with development partners and the private sector to help countries reduce their vulnerability to climate risks.”²

4. The Organisation for Economic Co-operation and Development (OECD) defines *green growth* as “fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.” It adds that, “to do this, it must catalyze investment and innovation which will underpin sustained growth and give rise to new economic opportunities.” It observes that “a green growth strategy is centered on mutually reinforcing aspects of economic and environmental policy,” noting further that “it takes into account the full value of natural capital as a factor of production and its role in growth [and] focuses on cost-effective ways of attenuating environmental pressures to effect a transition towards new patterns of growth that will avoid crossing critical local, regional, and global environmental thresholds.”³

5. The United Nations Environment Programme (UNEP) defines a *green economy* as one that results in “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.”⁴ It adds that in “its simplest expression, a green economy is low-carbon, resource-efficient, and socially inclusive” and that “growth in income and employment are driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.”⁵ Green growth, therefore, refers to the growth of the green economy.

¹ World Bank. 2012. *Inclusive Green Growth: The Path to Sustainable Development*. Washington, D.C., p. 30.

² World Bank. 2012. *Toward a Green, Clean, and Resilient World for All: A World Bank Group Environment Strategy 2012–2022*. Washington D.C. May, pp. 2–3. According to this document “green” refers to “a world in which natural resources, including oceans, land, and forests, are sustainably managed and conserved to improve livelihoods and ensure food security and in which healthy ecosystems increase the economic returns from the activities they support.”

³ Organisation of Economic Co-operation and Development. 2011. *Towards Green Growth*. Paris. Executive Summary, pp. 9–10.

⁴ United Nations Environment Programme. 2010. *Green Economy: Developing Countries Success Stories*. Geneva.

⁵ United Nations Environment Programme. 2011. *Towards a Green Economy: Pathways to Sustainable Development and Poverty Reduction*. Nairobi. p.16.

6. All three institutions aim to provide a policy framework to help achieve green growth. Green growth, according to their thinking, leads to a reduction in greenhouse gas emissions, prevents further environmental degradation, and promotes the efficient and sustainable use of natural resources. UNEP takes these ideas one-step further and argues that greening the economy can outpace the current environmentally damaging rate of growth. The World Bank, OECD, and UNEP also stress the importance of governments in creating the enabling conditions for investment to be redirected from environmentally activities to greener industries and businesses. The World Bank argues that short-term interventions (in the next 5–10 years) will be particularly important because of the need to prevent lock-ins and to show immediate benefits to society while the costs of greening growth are highest and most keenly felt.

7. While each organization frames sustainable development as the goal, they appear to have different views as to which aspects of sustainability are primary. The World Bank and UNEP pay more attention to the social aspects of sustainable development while the OECD focuses more on the economy and the environment. All, however, emphasize that any attempts to “green the economy” must take a pro-poor approach, although there is some ambiguity about how far this should go. The attention that the World Bank and UNEP give to social aspects is more aligned with the integrated nature of the Sustainable Development Goals (SDGs). However, the World Bank and ADB have moved away from direct poverty targeting and have increased (World Bank) or maintained (ADB) their focus on infrastructure. Thus, achieving environmentally sustainable growth and supporting the SDGs will require operations to evolve.

APPENDIX 4: STAFF PERCEPTIONS OF GUIDANCE AND OPERATIONALIZATION OF ENVIRONMENTALLY SUSTAINABLE GROWTH IN ADB

1. The evaluation team administered an online survey questionnaire to team members¹ of projects tagged as supporting environmentally sustainable growth (ESG) approved during 2004–2014. The questionnaire was also sent to international staff and national officers and analysts in the Strategy and Policy Department and the Sustainable Development and Climate Change Department because of their technical support role and involvement in developing strategy and classifying projects.
2. The survey consisted of 14 items, eight of which were multiple choice questions and two of which were open-ended questions allowing respondents to provide detailed answers.² For the multiple choice questions, respondents were asked whether they agreed (and to what extent) with statements on their understanding and/or familiarity with ESG guidance documents, and the project classification systems.
3. The online survey questionnaire was sent to 608 staff of whom 104 responded for a response rate of 17% (see Table A4.1 for breakdown). By staff category, 3 of the respondents were at director level, 47 were international staff, 52 were national officers and/or analysts.

Table A4.1: Survey Response Rate

Respondents	Questionnaires	Responses	Response Rate
	Sent	Received	(%)
Regional Departments	476	84	18
SPD and SDCC	132	20	15
Total	608	104	17%

SDCC = Sustainable Development and Climate Change Department, SPD = Strategy and Policy Department.

Source: Independent Evaluation Department.

A. Survey Results

4. **Understanding of ADB’s Environmentally Sustainable Growth agenda.** Seventy staff (67% of survey respondents) reported having a clear understanding of ESG (by staff category, 79% of national staff, 67% of international staff, and 62% of administrative staff). Thirty-one staff (30% of respondents), of whom 33% were international staff, reported they did not have a clear understanding of ESG. While there is a high level of understanding of ESG as a priority, the extent to which it is reflected in operations is less clear. As one staff member commented, the environment is a cross-cutting area, and ADB rarely develops projects with a primary focus on the environment. Climate change has overtaken the environment as a priority within ADB. One staff member echoed a key point that this paper makes: “the focus on climate is a positive one, but it should not result in a loss of focus on broader environmental issues: air quality, waste management, water security, and sustainable land management.”
5. **Clarity of Strategy 2020 Environmentally Sustainable Growth priorities** (climate change, livable cities, and complementary actions). Over half (56%) of staff respondents were of the view that Strategy 2020 ESG priorities provide a sufficient framework for addressing the region’s environmental challenges. However, some staff qualified their comments. For instance, one staff member said that, while livable cities are a priority, the meaning of this concept is not very clear. Staff noted that complementary actions were vague and needed to be made more specific. Some pointed out that issues related to sustainable land and water management and biodiversity were completely left out of

¹ Staff in operational departments who were involved in processing and/or implementing.

² The other four items asked about the respondents’ profile (departments, years in ADB, staff category, and job level).

Strategy 2020, along with environmental pollution from agriculture and mining activities, which are serious issues in some countries. One staff member expressed the view that the “strategy talks about everything without clearly providing concrete operational directions.”

6. **Familiarity with the Environment Operational Directions (EOD).** Less than a third of staff were familiar or strongly familiar with the EOD. Nearly 44% were somewhat familiar. Of those who were familiar with the EOD, 72% were of the view that the EOD provide adequate guidance for operationalizing ESG.

7. **Addressing Environmentally Sustainable Growth concerns in the design of ADB projects.** Of the respondents, 53% agreed or strongly agreed that they had seen ADB address ESG issues more explicitly in the design of ADB projects in their sectors since 2009. By staff category, only 40% of international staff concurred with this statement, in contrast to 55% of administrative staff and 71% of national staff. One international staff member expressed the view that “many projects are tagged ESG but most of the time this relates to climate change and projects that explicitly seek to address other aspects of ESG are few and far between. Most often these are projects that are automatically considering ESG at the request of a government rather than project designs being changed so they address the ESG agenda.”

8. **Project Classification System (PCS), 2014.** Half (52%) of staff respondents agreed or strongly agreed that the new project classification ESG subthemes sufficiently captured the environmental nature of ESG projects in the areas they had worked on. By staff category, 56% of international staff agreed or strongly agreed, compared with only 40% of national staff and 50% of administrative staff. Staff found the ESG subthemes too broad, which meant that they could include projects that had only limited elements of ESG. For instance, a staff member commented that it was not clear where climate change should be classified. Under the current PCS, climate change response actions is classified under the global and regional transboundary concerns subtheme. This is not always a good fit as is the case for climate proofing of infrastructure projects, which is a local concern. Staff suggested more appropriate ESG subthemes, including natural capital and pollution prevention. Some staff suggested subthemes that were already PCS subthemes, suggesting a lack of familiarity with the PCS (e.g., environmental policy, disaster risk management, natural resource conservation).

9. Two-thirds of staff respondents expressed confidence that their sector could do more to meet ADB's commitment to double support for climate change (adaptation and mitigation). Staff felt more could be done in most sectors and/or subsectors, particularly in water and/or integrated water resources management, sustainable forestry management, renewable energy, and natural capital.

10. The survey responses were generally consistent with this paper's findings. There is a general recognition among staff that ESG is a strategic priority. There is, however, scope for ADB to clarify the strategy and to raise awareness of EOD as a guidance document. Staff members also believed there was room in projects to expand ADB support for climate change. Staff felt a better classification of ESG projects was possible and that more could be done to integrate ESG issues into projects.

APPENDIX 5: ADB PARTNERSHIPS ON ENVIRONMENT AND CLIMATE CHANGE, (2000-MID-2015)

Partners	Partnership Name	Objective
A. Knowledge Partnerships		
Center for HydroInformatics in River Basins	Asia-Pacific Water Forum (APWF) Regional Water Knowledge Hubs	Contribute to improved regional knowledge exchange on water issues
International Research and Training Center on Erosion and Sedimentation	Asia-Pacific Water Forum (APWF) Regional Water Knowledge Hubs	Contribute to improved regional knowledge exchange on water issues
Asian Institute of Technology, United Nations Environment Programme, United Nations Economic and Social Commission for Asia and the Pacific	Letter of Intent with Asian Institute of Technology, United Nations Environment Programme, United Nations Economic and Social Commission for Asia and the Pacific	Facilitate establishment of regional knowledge hub on reduce, reuse, and recycle
Canadian Cooperation Fund on Climate Change, Climate Change Fund, and the Asian Clean Energy Fund	The Economics of Climate Change in the Pacific	Funding for collaborative research for ADB publication
Department for International Development of the Government of the UK (financing); Ministry of Environment and Forests (Bangladesh), National Environment Commission (Bhutan), Ministry of Environment and Forests (India), Ministry of Environment and Energy (the Maldives), Ministry of Environment, Science and Technology (Nepal), and Ministry of Environment (Sri Lanka) - in-country partner focal agencies	Assessing the Costs of Climate Change and Adaptation in South Asia	Publication on Assessing the Costs of Climate Change and Adaptation in South Asia
Eco-Compensation Policy Research Center, Chinese Agricultural University	Regional Knowledge Hub on Green Growth and Eco-Compensation	Contribute to improved knowledge exchange on environmental protection and eco-compensation for sustainable development
Energy Environment Economy Institute of Tsinghua University	Letter of Intent with Tsinghua 3E on Regional Knowledge Hub on Climate Change	Facilitate the establishment of a regional knowledge hub on climate change
Institute for Global Environmental Strategies	MOU with Institute for Global Environmental Strategies	Intend to cooperate to support environmentally sustainable growth throughout the Asia Pacific Region
International Union for Conservation of Nature-World Conservation Union	MOU with International Union for Conservation of Nature-The World Conservation Union	Facilitate the realization of common aim of poverty reduction and environmentally sustainable development
Korea Development Institute School of Public Policy and Management	MOU between Korea Development Institute School of Public Policy and Management and ADB	Establish a knowledge sharing and cooperation framework in selected sectors and projects, including the Asia Leadership Program on Sustainable Development and Climate Change
National Technical Working	Strengthening Planning Capacity for	Strengthen capacity of national

Partners	Partnership Name	Objective
Groups led by the National Economic and Development Authority (NEDA) for the Philippines and the Ministry of Planning and Investment for Viet Nam	Low Carbon growth in Developing Asia	agencies towards low carbon planning and development of low carbon road maps
Seoul National University	MOU between Seoul National University and ADB	Establish a framework for cooperation and knowledge sharing in the priority areas of public administration and governance, health, agriculture, and environment
UK's Department for International Development (DFID); UK's Department of Energy and Climate Change (DECC); and UK's Foreign and Commonwealth Office	Strengthening Planning Capacity for Low Carbon Growth in Developing Asia	Produce a report that discusses climate policy options for each of the five Southeast Asian countries based on more detailed national computable general equilibrium and bottom-up models
UK's Department for International Development; UK's Department of Energy and Climate Change; UK Stern Team	The Economics of Climate Change in Southeast Asia: A Regional Review	Publication of a report which is an outcome of an ADB technical assistance project, "A Regional Review of the Economics of Climate Change," with funding from the government of the United Kingdom
United Nations Development Programme	United Nations Development Programme	Cooperation on a 2015 Disaster Risk Management Project in Mongolia through joint ADB-UNDP government of Mongolia project steering committee
World Bank Group	Reducing Investment Climate Constraints to Higher Growth: Lao People's Democratic Republic Private Sector and Investment Climate Assessment	Publication on Reducing Investment Climate Constraints to Higher Growth: Lao People's Democratic Republic Private Sector and Investment Climate Assessment
World Bank, Australia	World Bank–Australia - Climate and Disaster Resilience for the Pacific	Harmonize approaches for climate and disaster risk management in the Pacific
World Wide Fund for Nature (WWF)	MOU with World Wide Fund for Nature (WWF)	Develop closer working arrangements between ADB and WWF on information sharing, knowledge management and capacity building, among others
B. Inter-Agency Coordination Partnerships		
Ministry of Environment, Japan	Letter of Intent on Cooperation for Environment between the Ministry of Environment Japan (MoEJ) and Asian Development Bank	Strengthen, facilitate, and develop mutual cooperation in the field of environment
US Environmental Protection Agency	Letter of Intent with US Environmental Protection Agency	Achieve common objectives with USAID
C. Financing Partnerships		
Belgium, Finland, Luxembourg, Portugal, Spain, Sweden, Switzerland	Asia Pacific Carbon Fund	Cofinance Clean Development Mechanism (CDM) projects supported by ADB in return for future supply of certified emission reductions (CERs) to be generated by the projects

Partners	Partnership Name	Objective
Department of Finance (Canada), Canadian International Development Agency	Integrated Disaster Risk Management Fund (IDRM)	Support the development of proactive IDRM measures on a regional basis within developing member countries in Southeast Asia
PMV (Belgium), Finland, Sweden, Korea, Netherlands, POSCO (Korea)	Future Carbon Fund	Cofinance CDM projects supported by ADB in return for future supply of certified emission reductions (CERs) to be generated by the projects
Federal Department of Economic Affairs (Switzerland)	Swiss Cooperation Fund for Consulting Services	Finance TA operations, including project preparation, advisory services, project implementation and other activities agreed upon by the government and ADB
International Bank for Reconstruction and Development (IBRD)	Global Environment Facility	Assist in the protection of the global environment and promote environmental sustainable development
Government of Canada represented by the Canadian International Development Agency (CIDA)	Canadian Climate Fund for the Private Sector in Asia	Cofinancing for climate change mitigation and adaptation
Government of Italy	Italian Cooperation Fund for Consulting Services	Finance TA operations, including project preparation, advisory services, project implementation and other activities agreed upon by the government and ADB
International Bank for Reconstruction and Development (IBRD) Inter-American Development Bank, African Development Bank, European Bank for Reconstruction and Development, and World Bank Group	Clean Technology Fund	Provide scaled-up financing to middle-income countries to contribute to the demonstration, deployment and transfer of low carbon technologies with significant potential for long-term greenhouse gas emissions savings
International Bank for Reconstruction and Development (IBRD) Inter-American Development Bank, African Development Bank, European Bank for Reconstruction and Development, and World Bank Group	Strategic Climate Fund (Forest Investment Program)	Support developing countries' efforts to reduce emissions from deforestation and forest degradation and promote sustainable forest management and enhancement of forest carbon stocks (REDD+)
International Bank for Reconstruction and Development (IBRD) Inter-American Development Bank, African Development Bank, European Bank for Reconstruction and Development, and World Bank Group	Strategic Climate Fund (Scaling Up Renewable Energy Program in Low-Income Countries)	Scale up the deployment of renewable energy solutions in the world's poorest countries to increase energy access and economic opportunities
Ministry of Foreign Affairs (Norway); Swedish International Development Cooperation Agency	Poverty and Environment Fund	Promote the mainstreaming of environment objectives in ADB operations and DMC poverty reduction strategies, plans, programs, and projects
Ministry of Foreign Affairs and	Technical Assistance Grant Fund	Finance TA projects, including

Partners	Partnership Name	Objective
Trade (New Zealand)		project preparation, advisory services, project implementation and other activities agreed upon by the government and ADB

ADB = Asian Development Bank, CDM = Clean Development Mechanism, CER = certified emission reduction, CIDA = Canadian International Development Agency, DECC = Department of Energy and Climate Change, DFID = Department for International Development, DMC = developing member country, IBRD = International Bank for Reconstruction and Development, IDRM = Integrated Disaster Risk Management Fund, MOEJ = Ministry of Environment, Japan, MOU = memorandum of understanding, NEDA = National Economic and Development Authority, REDD+ = Reducing Emissions from Deforestation and Forest Degradation, TA = technical assistance, UNDP = United Nations Development Program, USAID = United States Agency for International Development, WWF = World Wide Fund for Nature.

Source: Independent Evaluation Department, partnerships mapping database.

APPENDIX 6: KNOWLEDGE PRODUCTS RELATED TO THE ENVIRONMENT AND CLIMATE CHANGE, 2012–2015

Title	Department, Sector Group, or Thematic Group	Sector or Theme	Year
Policies and Practices for Low-Carbon Green Growth in Asia – Highlights	ADBI	Governance and PSM, Environment	2012
Indus Basin Floods: Mechanisms, Impacts, and Management	CWRD	Climate Change, Water	2013
The Role of Eco-Compensation in Trans-Boundary Watershed Management — case studies from PRC	EARD	ANR, Water, Environment, Governance and PSM, CD	2015
Reviving Lakes and Wetlands in the People's Republic of China, Volume 2: Lessons Learned on Integrated Water Pollution Control from Chao Lake Basin	EARD	ANR, Water, Environment, Governance and PSM, CD	2015
Roadmap for Carbon Capture and Storage Demonstration and Deployment in the People's Republic of China	EARD	Energy, Climate Change	2015
Making Grasslands Sustainable in Mongolia: Adapting to Climate and Environmental Change	EARD	ANR, Economics, SDP, Environment, Private Sector, Governance and PSM	2014
Study on the Construction of the Most Stringent Water Resources Management Evaluation System (Subproject 1.14): Synopsis of Final Report	EARD	ANR, Water, Urban Development, Environment, CD	2014
Identification and Review of GHG Emission Reduction Activities in Poverty Alleviation Projects (Subproject 1.4): Synopsis of Final Report	EARD	Energy, Environment, Governance and PSM	2014
Soil Pollution and Contaminated Land Management in the PRC	EARD	Urban Development, Economics, Environment, Governance and PSM	2014
Three Publications (i) Water Balance of Ningxia Yinchuan Wetlands and Integrated Management (ii) Birds Biodiversity in Sand Lake, Ningxia (iii) Integrated Wetland Management – Proceeding of International Workshop on Integrated Wetland Management	EARD	ANR, Environment, Private Sector	2013
Costs of Adaptation to Rising Coastal Water Levels for People's Republic of China, Japan and the Republic of Korea	EARD	ANR, Urban Development, Water, Environment, Climate Change, Governance and PSM	2013
ADB-Tongji Urban Knowledge Sharing Seminar: New Towns and New Districts in China – Challenges and Opportunities	EARD	CD, Environment, Urban Development, ANR, Education, Water	2013
Research on Environmental Protection and Management in Rural Areas of Anhui Province: Consultant's Report	EARD	Environment	2013
Country Report on Climate Change (PRC)	EARD	Environment, Climate Change, Governance and PSM	2013
Mechanism of Economic Compensation for Farmland Protection	EARD	Governance and PSM, Environment	2013

Title	Department, Sector Group, or Thematic Group	Sector or Theme	Year
Sustainable Operation Mechanisms of Wastewater Management at Small City Level	EARD	Urban Development, Water, Environment	2013
Legal and Policy Framework for Management of Land Degradation in Dryland Ecosystems of the PRC	EARD	ANR, Environment, Governance and PSM	2012
Drying Up: What to do about Droughts in the PRC	EARD	ANR, Water, Environment, Governance and PSM	2012
Toward an Environmentally Sustainable Future: Country Environmental Analysis of the PRC	EARD	ANR, Water, Environment, Governance and PSM	2012
Flood Risk Management Strategy in the PRC – Learning to Live with Flood Risks	EARD	ANR, Urban Development, Water, Environment, Climate Change, CD	2012
Promoting Sustainable Sewage Sludge Treatment and Utilization in the People’s Republic of China	EARD	Urban Development, Water, Environment, Governance and PSM	2012
Comparative Analysis of Sewage Sludge Management Options for Chinese Cities	EARD	Urban Development, Water, Environment, Governance and PSM	2012
Small Remains Beautiful: Energizing Rural Poor in Asia with Small Wind Power Systems	EARD, PSOD	Energy, Environment	2012
Southeast Asia and the Economics of Global Climate Stabilization	ERCD	Climate Change, Economics, Environment	2015
Urban Metabolism of Six Asian Cities	ERCD	Urban Development, Environment, CD	2014
Sustainable Urbanization in Asia and Latin America	ERCD	Urban Development, Environment, CD	2014
The Economics of Climate Change in the Pacific	ERCD	Environment, CD	2013
Real-Time Evaluation of ADB’s Initiatives to Support Access to Climate Finance	IED	Climate Change, Energy, Economics	2014
Safeguards Operational Review: ADB Processes, Portfolio, Country Systems, and Financial Intermediaries	IED	Environment, SDP, Energy	2014
Topical Paper: ADB Support for Clean Technologies through the Climate Investment Funds	IED	Climate Change, Environment	2013
Special Evaluation Study on ADB’s Response to Natural Disasters and Disaster Risks	IED	Climate Change, Energy, Economics, Environment	2012
Climate Disasters and Development in Asia–Pacific	IED	Climate Change, Energy, Environment	2012
Review and Compendium of Environmental Policies and Laws in Bhutan: Input to the Asian Judges Network on Environment	OGC	Environment, Governance and PSM	2014
Moving from Risk to Resilience: Sustainable Urban Development in the Pacific	PARD	Environment, Urban Development	2013
Climate Change, Food Security, and Socioeconomic Livelihood in Pacific	PARD, Agriculture	ANR, Climate change	2015

Title	Department, Sector Group, or Thematic Group	Sector or Theme	Year
Islands			
State of the Coral Triangle: Solomon Islands	PARD, SERD	Environment	2014
State of the Coral Triangle: Papua New Guinea	PARD, SERD	Environment	2014
State of the Coral Triangle: Timor–Leste	PARD, SERD	Environment	2014
Financing Low–Carbon Urban Development in South Asia: A Post–2012 Context	SARD	Climate Change, Environment, Urban Development	2013
Development of Solar and Wind Power in Karnataka and Tamil Nadu	SARD	Energy, Environment	2013
Henan Hebi Qihe River Environmental Improvement and Ecological Conservation	SDCC	Environment, ANR	2014
Towards a Sustainable Transport Appraisal Rating (STAR)	SDCC	Transport, Environment	2014
Case Study on Lanzhou Bus Rapid Transit (BRT) as a CDM Project Activity	SDCC	CC, Environment, Energy, Transport	2013
Lesson Learnt and Good Practices: Community Based Adaptation in Vulnerable Coastal Areas of Bangladesh Project	SDCC	Climate Change, CD, Poverty, SDP	2013
ADB’s Climate Change Program	SDCC	Climate Change, Environment	2013
Overview of Climate Financing at the Asian Development Bank (March 2013)	SDCC	Climate Change, Environment	2013
ADB’s Climate Change Program (Focused on Finance)	SDCC	Climate Change, Finance	2013
ADB’s Climate Change Financing Program (LEDS)	SDCC	Climate Change, Finance, Energy	2013
Climate Change: New Initiatives and Possibilities for India	SDCC	Climate Change, SDP	2013
Asian Development Bank Sustainability Report 2013: Investing in Asia and the Pacific’s Future	SDCC	Environment	2013
Adaptation Opportunities to Transform Development pathways	SDCC	Environment	2013
Retrospective Review of Implementation Strategy 2020 on Environmentally Sustainable Growth	SDCC	Environment, Poverty, Governance and PSM	2013
Adapting to Climate Change through Integrated Water Resources Management	SDCC	Water, Climate Change	2013
Climate Conference in Doha: Outcomes and Implications	SDCC	Climate Change	2012
Climate change projections for the western tropical Pacific	SDCC	Climate Change, Environment	2012
Climate change Scenarios used in climate change Impact Assessment in China	SDCC	Climate Change, Environment	2012
ADB’s Climate Change Program	SDCC	Climate Change, Gender	2012

Title	Department, Sector Group, or Thematic Group	Sector or Theme	Year
COP17 Summary: Potential Impact of the Durban Outcomes on the Carbon Market	SDCC	Climate Change, Industry and Trade, Environment	2012
ADB's efforts in sustainable low-carbon transport	SDCC	Energy, Environment, Climate Change	2012
REDD: A stepwise approach to reference levels	SDCC	Environment, ANR	2012
Ecological Footprint and Investment in Natural Capital in Asia and the Pacific	SDCC	Environment, Climate Change	2012
Opportunities and Challenges to Developing REDD+ Benefit Sharing Mechanisms in Developing Countries	SDCC	Environment, RCI	2012
Acclimatise Aware: development of an innovative climate risk screening tool	SDCC	Transport, Energy, Climate Change, Environment	2012
Strengthening City Disaster Risk Financing in Viet Nam	SDCC, Climate Change and DRM	Climate Change, DRM	2015
Promoting Sustainable Development through DRM	SDCC, Climate Change and DRM	Climate Change, DRM	2015
Economic Analysis of Climate-Proofing Investment Projects	SDCC, Climate Change and DRM	Climate Change, DRM, Economics	2015
Technologies to Support Climate Change Adaptation in Developing Asia	SDCC, Climate Change and DRM	Climate Change	2014
Climate Proofing ADB Investment in the Transport Sector	SDCC, Transport, Climate Change and DRM	Transport, Climate Change, DRM	2015
Identifying Sustainability Indicators of Strategic Environmental Assessment for Power Planning	SERD	Energy, Environment	2015
How Strategic Environmental Assessment can Influence Power Development Plans: Comparing Alternative Energy Scenarios for Power Planning in the GMS	SERD	Energy, Environment	2015
Integrating Strategic Environmental Assessment into Power Planning	SERD	Energy, Environment	2015
State of the Coral Triangle Report 2012: Indonesia	SERD	ANR, Water, Environment	2014
Regional Cooperation on Knowledge Management, Policy, and Institutional Support to the Coral Triangle Initiative (Indonesia: State of the Coral Triangle Report)	SERD	ANR, Water, Environment, RCI, CD	2014
Regional Cooperation on Knowledge Management, Policy, and Institutional Support to the Coral Triangle Initiative (Malaysia: State of the Coral Triangle Report)	SERD	ANR, Water, Environment, RCI, CD	2014

Title	Department, Sector Group, or Thematic Group	Sector or Theme	Year
Regional Cooperation on Knowledge Management, Policy, and Institutional Support to the Coral Triangle Initiative (Philippines: State of the Coral Triangle Report)	SERD	ANR, Water, Environment, RCI, CD	2014
Climate Change and Rural Communities in the GMS: A Framework for Assessing Vulnerability and Adaptation Options	SERD	Climate Change	2014
Climate Risk in the Mekong Delta	SERD	ANR, Economics, SDP, Environment, Climate Change, RCI, Private Sector/Governance and PSM	2013
Climate Change Vulnerability and Agricultural Communities in the GMS	SERD	ANR, Economics, SDP, Environment, Climate Change, RCI, Private Sector, Governance and PSM	2013
Downstream Impacts of Water Pollution in the Upper Citarum River, West Java, Indonesia (Co-publication with World Bank)	SERD	ANR, Water, Economics, Environment	2013
Climate Risks in the Mekong Delta: Ca Mau and Kien Giang Provinces of Viet Nam	SERD	ANR, Water, Economics, Environment, Governance and PSM	2013
Environment and Climate Change Assessment	SERD	ANR, Water, Urban Development, Economics, Environment, Private Sector	2013
RAY (Reconstruction Assistance on Yolanda) Build Back Better	SERD	Climate Change, DRM	2013
Environmental Impacts of Renewable Energy Projects	SERD	Energy, Economics, Environment, Gender	2013
New Energy Architecture: Myanmar (formerly An Assessment of Energy Sector in Myanmar)	SERD	Energy, Economics, SDP, Environment, Private Sector, Governance and PSM, CD	2013
Green Freight in the GMS	SERD	Transport, Economics, SDP, Environment, RCI, Industry and Trade, Private Sector	2013
Myanmar Environment Assessment	SERD	Urban Development, Environment, CD	2013
Sector Assessment (Summary): Agriculture, Natural Resources, and Environment; and Viet Nam Agriculture, Natural Resources and Environment Strategy, Assessment and Roadmap (February 2012).	SERD	ANR, Environment, Economics, Private Sector	2012
GMS Power Trade and Interconnection: 2 Decades of Cooperation (September 2012)	SERD	Energy, Environment, RCI Governance and PSM, Private Sector, CD	2012
GMS 2020: Balancing Economic Growth and Environmental Sustainability	SERD	Environment, Governance and PSM, Private Sector	2012

Title	Department, Sector Group, or Thematic Group	Sector or Theme	Year
Together We Deliver: From Knowledge and Partnerships to Results	SPD	CD, Environment, Energy, Education, Finance, Gender, Health, Industry and Trade, Private Sector, Transport, Water, Urban Development	2015
Together We Deliver: 10 Stories from ADB-Supported Projects with Clear Development Impacts	SPD, DER	Climate Change, Education, Energy, Finance, Gender, Governance and PSM, Private Sector, Transport, Water, RCI	2014

ADB = Asian Development Bank, ADBI = Asian Development Bank Institute, ANR = agriculture and natural resources, BRT = bus rapid transit, CD = capacity development, CWRD = Central and West Asia Department, DER=Department of External Relations, DRM=disaster risk management, EARD = East Asia Department, ERCD = Economic Research and Regional Cooperation Department, GHG=greenhouse gas, GMS = Greater Mekong Subregion, IED = Independent Evaluation Department, LEDS=low emission development strategies, OGC = Office of the General Counsel, PARD = Pacific Department, PRC=The People's Republic of China, PSM=public sector management, PSOD = Private Sector Operations Department, RAY = Reconstruction Assistance on Yolanda, RCI = regional cooperation and integration, REDD = Reducing Emissions from Deforestation and Forest Degradation, SARD = South Asia Department, SDCC = Sustainable Development and Climate Change Department, SDP=social development and protection, SERD = Southeast Asia Department, SPD = Strategy and Policy Department, STAR = Sustainable Transport Appraisal Rating.

Note: Knowledge products include selected books, policy papers, and reports.

Source: Asian Development Bank K-Nexus database.

APPENDIX 7: LIST OF RANDOMLY SELECTED REPORTS AND RECOMMENDATIONS OF THE PRESIDENT REVIEWED

Project Number	Loan or Grant Number	Country	Loan or Grant Title	Approved Amount (\$ million) ^a	Date of Approval
Agriculture and Natural Resources					
39603	34/35	CAM	Tonle Sap Sustainable Livelihoods	19.74	21 Dec 2005
40253	2721/241/242	VIE/CAM/ LAO	Greater Mekong Subregion Biodiversity Conservation Corridors	69.00	10-Dec-2010
44037	2980/331	PRC	Shaanxi Weinan Luyang Integrated Saline Land Management	102.00	17-Dec-2012
44167	3138/396	BAN	Flood and Riverbank Erosion Risk Management Investment Program - Project 1	80.30	3-Jul-2014
48326	412	AFG	Northern Flood-Damaged Infrastructure Emergency Rehabilitation	56.66	16-Oct-2014
36437	2428/194	PRC	Integrated Ecosystem and Water Resources Management in the Baiyangdian Basin Project	102.98	24-Jun-2008
40685	2838/311	PRC	Jiangsu Yancheng Wetlands Protection Project	39.15	16-Dec-2011
41220	2957/8266/324/325	PHI	Integrated Natural Resources and Environmental Management Project	123.91	3-Dec-2012
40238	3032	VIE	Productive Rural Infrastructure Sector Project in the Central Highlands	80.00	25-Sep-2013
43448	3057/367	NEP	Bagmati River Basin Improvement	30.00	31-Oct-2013
47235	3159/3160	PAK	Trimmu and Panjnad Barrages Improvement	150.00	22-Sep-2014
41054	9114	CAM	Building Community Capacity for Poverty Reduction Initiatives in the Tonle Sap Basin	1.50	19-Dec-2007
37710	9046	VIE	Poverty Reduction in Red River Basin Irrigation Systems	0.82	15 Apr 2004
33439	2082	PRC	Fujian Soil Conservation and Rural Development II Project	80.00	28-Apr-2004
34341	2269/0060	VIE	Forests for Livelihood Improvement in the Central Highlands Sector	53.00	26-Oct-2006
38660	2436/0113	PRC	Ningxia Integrated Ecosystem and Agricultural Development	104.55	29-Aug-2008
40086	2492/2493	UZB	Water Resources Management Sector	100.00	17-Dec-2008
44035	2973	PRC	Ningxia Irrigated Agriculture and Water Conservation Demonstration Project	70.00	14-Dec-2012
45406	2968	VIE	Low Carbon Agricultural Support Project	74.00	12-Dec-2012
47021	3239	PAK	Federally Administered Tribal Areas Water Resources Development	42.97	15-Dec-2014
40046	9126	TAJ	Community Participatory Flood Management	3.00	8-Sep-2008
33276	2311/0071	PHI	Integrated Coastal Resources Management	31.55	23-Jan-2007
35289	2157/4571	PRC	Sanjiang Plain Wetlands Protection Project	27.14	14-Mar-2005
37530	2313/0072/0111	TAJ	Rural Development Project	20.60	29-Jan-2007

Project Number	Loan or Grant Number	Country	Loan or Grant Title	Approved Amount (\$ million) ^a	Date of Approval
37641	2244	PRC	Hunan Flood Management Sector	200.00	29-Jun-2006
38558	2672/2673/0220	CAM	Water Resources Management Sector Development Program (Program)	32.80	23-Sep-2010
38594	2573	PRC	Guiyang Integrated Water Resource Management (Sector)	150.00	29-Oct-2009
39421	2513	VIE	Quality and Safety Enhancement of Agricultural Products and Biogas Development	95.00	18-Mar-2009
40156	2679	IND	Sustainable Coastal Protection and Management Investment Program - Tranche 1	51.56	6-Oct-2010
40515	2696	BAN	Sustainable Rural Infrastructure Improvement	60.00	11-Nov-2010
42011	2647	PRC	Wuhan Urban Environmental Improvement	100.00	30-Jun-2010
43253	3172	IND	Karnataka Integrated and Sustainable Water Resources Management Investment Program - Project 1	31.00	17-Oct-2014
40017	2494	PRC	Qingdao Water Resources and Wetland Protection	45.00	17-Dec-2008
Energy					
40553	2587/182/183	NEP	Energy Access and Efficiency Improvement	69.50	27-Nov-2009
40682	2632/202/203	PRC	Integrated Renewable Biomass Energy Development Sector	78.28	16-Apr-2010
48192	389/390	TON	Cyclone Ian Recovery	8.79	16-May-2014
46122	409/410/429	MLD	Preparing Outer Islands for Sustainable Energy Development	55.00	29-Sep-2014
39019	2260	PRC	Inner Mongolia Autonomous Region Environment Improvement	120.00	29-Sep-2006
37139	2309	IND	Uttaranchal Power Sector Investment Program - Tranche 1	41.92	2-Jan-2007
39595	2610	VIE	Mong Duong 1 Thermal Power Project - Project 2	902.85	21-Dec-2009
37113	2769	BAN	Power System Efficiency Improvement	300.00	11-Aug-2011
42378	2966/320	BAN	Power System Expansion and Efficiency Improvement Investment Program - Tranche 1	192.00	12-Dec-2012
43197	2998/2999	PNG	Port Moresby Power Grid Development	66.70	26-Apr-2013
43464	3001	IND	Himachal Pradesh Clean Energy Transmission Investment Program - Tranche 2	110.00	7-May-2013
46390	3084	MYA	Power Distribution Improvement Project (SF)	60.00	6-Dec-2013
39652	2296	PRC	Gansu Heihe Rural Hydropower Development Investment Program - Tranche 1: Erlongshan Hydropower Project	22.00	18-Dec-2006
42182	2517/0384	VIE	Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector	154.00	30-Mar-2009
40634	2658	PRC	Inner Mongolia Autonomous Region Environment Improvement Project (Phase II)	150.00	6-Aug-2010

Project Number	Loan or Grant Number	Country	Loan or Grant Title	Approved Amount (\$ million) ^a	Date of Approval
43576	2892/2893/0303	SRI	Clean Energy and Network Efficiency Improvement	131.50	18-Sep-2012
43281	2990/2991	NEP	Tanahu Hydropower Project	150.00	21-Feb-2013
45224	3052/8275	IND	Rajasthan Renewable Energy Transmission Investment Program - Tranche 1	150.00	22-Oct-2013
47100	3066	IND	Madhya Pradesh Power Transmission and Distribution System Improvement	350.00	27-Nov-2013
46014	3127/0386	SOL	Provincial Renewable Energy Project	12.00	12-May-2014
36352	2429	VIE	Song Bung 4 Hydropower Project	196.00	26-Jun-2008
36362	2112	PRC	Liaoning Environmental Improvement Project	70.00	25-Nov-2004
39415	2733/2734	SRI	Sustainable Power Sector Support	120.00	27-Jan-2011
41155	2808/270/271	NEP	Electricity Transmission Expansion and Supply Improvement Project	100.00	15-Nov-2011
41504	2713/2714	PNG	Town Electrification Investment Program - Tranche 1	47.30	6-Dec-2010
41614	2592	IND	Assam Power Sector Enhancement Investment Program - Project 1	49.60	27-Nov-2009
42117	2616/0196	PRC	Tianjin Integrated Gasification Combined Cycle Power Plant	116.84	8-Feb-2010
42252	0228	BHU	Rural Renewable Energy Development	21.59	29-Oct-2010
43452	0347	TON	Outer Island Renewable Energy	2.00	27-Jun-2013
44011	2898	PRC	Heilongjiang Energy Efficient District Heating	150.00	25-Sep-2012
Transport					
41657	2409/110	BAN	Emergency Disaster Damage Rehabilitation (Sector)	190.00	28-Mar-2008
44058	239	NEP	Kathmandu Sustainable Urban Transport	22.52	30-Nov-2010
42391	2832/275/276	VAN	Port Vila Urban Development	36.00	13-Dec-2011
45022	3216/420	PRC	Jiangxi Ji'an Sustainable Urban Transport	122.55	9-Dec-2014
42010	2657	PRC	Guangxi Southwestern Cities Development	150.00	26-Jul-2010
41414	2730	VIE	Greater Mekong Subregion Ben Luc-Long Thanh Expressway Project - Tranche 1	350.00	22-Dec-2010
43332	2765	PRC	Railway Energy Efficiency and Safety Enhancement Investment Program - Tranche 3	250.00	20-Jul-2011
32234	2845	BAN	Railway Sector Investment Program - Tranche 2	150.00	22-Dec-2011
42414	2879/2880	GEO	Sustainable Urban Transport Investment Program-Tranche 2	64.89	24-Jul-2012
40423	2881	IND	Rural Connectivity Investment Program-Tranche 1	252.00	22-Aug-2012
44425	2894	IND	Bihar State Highways II - Additional Financing	300.00	20-Sep-2012
44020	2903	PRC	Gansu Urban Infrastructure Development and Wetland Protection	100.00	26-Sep-2012
39256	2934/2935/315	MON	Urban Transport Development Investment Program - Tranche 1	61.40	8-Nov-2012
43029	3042	PRC	Inner Mongolia Road Development	200.00	8-Oct-2013
41193	3129	MON	Western Regional Road Corridor	125.00	14-May-2014

Project Number	Loan or Grant Number	Country	Loan or Grant Title	Approved Amount (\$ million) ^a	Date of Approval
			Investment Program - Tranche 2		
46168	3169/3170	BAN	South Asia Subregional Economic Cooperation Railway Connectivity: Akhaura-Laksam Double Track	505.00	30-Sep-2014
47273	3171	SRI	Integrated Road Investment Program - Tranche 1	100.00	3-Oct-2014
45094	2857/2858/3181	TIM	Road Network Upgrading - Additional Financing	51.78	30-Oct-2014
48141	3210	FIJ	Transport Infrastructure Investment Sector	100.00	5-Dec-2014
40625	2601	PRC	Lanzhou Sustainable Urban Transport	150.00	11-Dec-2009
41171	243	SOL	Transport Sector Development	12.00	15-Dec-2010
44372	2742/2743	PAK	Flood Emergency Reconstruction	633.40	30-Mar-2011
37287	2376	CAM	Tonle Sap Lowlands Rural Development Project	10.10	5-Dec-2007
39228	2420	PRC	Xinjiang Municipal Infrastructure and Environmental Improvement Project	105.00	23-Apr-2008
39399	2578/2579/2580/3117/8247/0179/0383	IND	South Asia Tourism Infrastructure Development (Bangladesh, India and Nepal)	105.50	16-Nov-2009
40282	2273	VIE	Emergency Rehabilitation of Calamity Damage	50.97	21-Nov-2006
40643	2526	PRC	Xinjiang Urban Transport and Environmental Improvement	100.00	29-Jun-2009
41116	2925	IND	Jammu and Kashmir Urban Sector Development Investment Program - Tranche 2	110.00	26-Oct-2012
41462	2826	VIE	Comprehensive Socioeconomic Urban Development Project in Viet Tri, Hung Yen, and Dong Dang	70.00	8-Dec-2011
42012	2648	PRC	Chongqing Urban-Rural Infrastructure Development Demonstration	100.00	30-Jun-2010
42169	2862/2863/2864/0287	BAN	Greater Dhaka Sustainable Urban Transport	164.60	17-Apr-2012
42254	2890/2891	SRI	Northern Road Connectivity - Additional Financing	98.00	14-Sep-2012
43024	2759	PRC	Xinjiang Altay Urban Infrastructure and Environment Improvement	100.00	23-Jun-2011
43032	2802	PRC	Xi'an Urban Road Network Improvement Project	150.00	8-Nov-2011
43200	2783/2784	PNG	Bridge Replacement for Improved Rural Access Sector Project	90.00	28-Sep-2011
Water and Other Urban Infrastructure and Services					
37381	2477/2977/129/130	SRI	Dry Zone Urban Water and Sanitation	125.00	28-Nov-2008
43319	2983/8265/334/335	CAM	Greater Mekong Subregion Southern Economic Corridor Towns Development	47.90	10-Dec-2012
35448	2099/2100	FSM	Omnibus Infrastructure Development Project	19.00	5-Nov-2004
29466	1813/2293	IND	Kolkata Environmental Improvement	330.00	14-Dec-2006
40031	2506	IND	Rajasthan Urban Sector Development Investment Program - Project 2	150.00	19-Jan-2009
43171	2534	GEO	Municipal Services Development -	30.00	28-Jul-2009

Project Number	Loan or Grant Number	Country	Loan or Grant Title	Approved Amount (\$ million) ^a	Date of Approval
			Phase 2		
42489	2633	UZB	Water Supply and Sanitation Services Investment Program - Tranche 2	140.00	21-Apr-2010
39298	2695	BAN	City Region Development	120.00	10-Nov-2010
38272	2797	IND	Uttarakhand Urban Sector Development Investment Program - Tranche 2	100.00	3-Nov-2011
42265	2806	IND	Assam Urban Infrastructure Investment Project - Tranche 1	81.00	18-Nov-2011
35290	2834	IND	North Eastern Region Capital Cities Development Investment Program - Tranche 2	72.00	16-Dec-2011
41456	2961	VIE	Water Sector Investment Program - Tranche 2	212.00	7-Dec-2012
37220	2975/2976	PAK	Sindh Cities Improvement Investment Program - Tranche 2	99.10	18-Dec-2012
42173	3051/8292	BAN	Dhaka Environmentally Sustainable Water Supply	314.00	22-Oct-2013
37697	3244/3245	MON	Darkhan Wastewater Management	18.50	16-Dec-2014
46270	9179	THA	Community-Based Flood Risk Management and Disaster Response in the Chao Phraya Basin	2.00	22-Oct-2014
33218	2170	MLD	Regional Development Project (Phase II) - Environmental Infrastructure and Management	6.00	28-Apr-2005
39127	2	INO	Earthquake and Tsunami Emergency Support	290.00	07 Apr 2005
40052	2388	PRC	Kunming Qingshuihai Water Supply Project	80.00	12-Dec-2007
40641	2574/0171	PRC	Hebei Small Cities and Towns Development Demonstration Sector	100.25	6-Nov-2009
38412	2684	IND	Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program - Tranche 1	48.50	25-Oct-2010
40648	2676	IND	Infrastructure Development Investment Program for Tourism - Tranche 1	43.42	4-Oct-2010
34304	2776	NEP	Kathmandu Valley Water Supply Improvement	80.00	16-Sep-2011
43054	2829	PRC	Hai River Estuary Area Pollution Control and Ecosystem Rehabilitation Project	100.00	13-Dec-2011
43316	2876/297	LAO	Pakse Urban Environmental Improvement	27.50	28-Jun-2012
45007	3098/3099/380	MON	Ulaanbaatar Urban Services and Ger Area Development Investment Program - Tranche 1	53.70	17-Dec-2013
35173	3157/8304/405	NEP	Third Small Towns Water Supply and Sanitation Sector	81.30	19-Sep-2014
46062	3202	PRC	Gansu Baiyin Integrated Urban Development	100.00	28-Nov-2014
26427	2117	BAN	Secondary Towns Integrated Flood Protection Project Phase 2	80.00	2-Dec-2004
32300	2226	IND	Kerala Sustainable Urban Development Project	221.20	20-Dec-2005

Project Number	Loan or Grant Number	Country	Loan or Grant Title	Approved Amount (\$ million) ^a	Date of Approval
34197	16	LAO	Northern and Central Regions Water Supply and Sanitation Sector	10.00	25 Aug 2005
34473	2207	PRC	Henan Wastewater Management and Water Supply Sector Project	100.00	9-Dec-2005
35340	2176	PRC	Fuzhou Environmental Improvement Project	55.80	29-Jul-2005
39071	2654	INO	Metropolitan Sanitation Management and Health	35.00	19-Jul-2010
40665	2487	PRC	Songhua River Basin Water Pollution Control and Management	200.00	11-Dec-2008
41022	157	NEP	Second Small Towns Water Supply and Sanitation Sector	45.10	17-Sep-2009
43025	2760	PRC	Gansu Tianshui Urban Infrastructure Development	100.00	29-Jun-2011
43072	2795/0263	KIR	South Tarawa Sanitation Improvement Sector Project (SF)	21.51	17-Oct-2011
43405	2749/22807/3078/3238	GEO	Urban Services Improvement Investment Program	326.00	12-Apr-2011
41403	3232	CAM	Urban Water Supply	34.00	11-Dec-2014
43524	3000/0342	NEP	Kathmandu Valley Wastewater Management	80.00	26-Apr-2013
Finance					
45273	2865/2866	BAN	Financing Brick Kiln Efficiency Improvement	50.00	10-May-2012
42180	3045/3046	BAN	Second Public-Private Infrastructure Development Facility	110.00	17-Oct-2013
46268	3186	IND	Clean Energy Finance Investment Program - Tranche 1	200.00	17-Nov-2014
31196	2314	KGZ	Southern Agriculture Area Development	20.00	29-Jan-2007
Industry and Trade					
38015	2457/117	VIE/LAO	GMS: Sustainable Tourism Development	20.00	15-Oct-2008
Multisector					
46351	378	TON	Climate Resilience Sector	19.25	9-Dec-2013
39118	2174	COO	Cyclone Emergency Assistance Project	2.83	30-Jun-2005
Public Sector Management					
39099	2160/0001	MLD	Tsunami Emergency Assistance Project	21.8	31-Mar-2005
46420	3100	PHI	Kalahi CIDDS National Community-Driven Development Project	372.10	16-Dec-2013
42191	2570	VIE	Support for the Implementation of the Poverty Reduction Program V (Subprogram 2)	100.00	15-Oct-2009

AFG = Afghanistan, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, CIDSS = Comprehensive Integrated Delivery of Social Service, COO = Cook Islands, FIJ = Fiji, FSM = Federated States of Micronesia, GEO = Georgia, IND = India, INO = Indonesia, KIR = Kiribati, KGZ = Kyrgyz Republic, LAO = Lao People's Democratic Republic, MLD = Maldives, MON = Mongolia, MYA = Myanmar, NEP = Nepal, PAK = Pakistan, PHI = Philippines, PNG = Papua New Guinea, PRC = People's Republic of China, SF = special fund, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, THA = Thailand, TIM = Timor Leste, TON = Tonga, UZB = Uzbekistan, VAN = Vanuatu, VIE = Viet Nam.

^a Includes cofinanced grants.

Source: Asian Development Bank database.

APPENDIX 8: ADB INVESTMENT PROJECTS FOR CLIMATE CHANGE MITIGATION AND ADAPTATION, 2014

Mitigation	
(i)	People's Republic of China — Guangdong Chaonan Water Resources Development and Protection Demonstration Project (\$10 million)
(ii)	People's Republic of China — Railway Energy Efficiency and Safety Enhancement Investment Program-Tranche 5 (\$60 million)
(iii)	People's Republic of China — Jiangxi Ji'an Sustainable Urban Transport Project (\$5.55 million)
(iv)	People's Republic of China — Low Carbon District Heating Supply in Hohhot in Inner Mongolia Autonomous Region (\$64.6 million)
(v)	People's Republic of China — Jilin Urban Development (\$9 million)
(vi)	People's Republic of China — Jiangxi Fuzhou Urban Integrated Infrastructure Improvement - Additional Financing (\$2.55 million)
(vii)	Viet Nam — Sustainable Urban Transport for Ho Chi Minh Mass Rapid Transit Line 2 Project (\$29 million)
(viii)	Viet Nam — Strengthening Sustainable Urban Transport for Hanoi Metro Line 3 (\$26 million)
(ix)	Viet Nam — Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector-Additional Financing (\$3 million)
(x)	Viet Nam — Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector-Additional Financing (\$3 million)
(xi)	Viet Nam — Hanoi & Ho Chi Minh City Power Grid Development (\$159.57 million)
(xii)	Nepal — South Asia Tourism Infrastructure Development Project-Additional Financing (\$3 million)
(xiii)	Nepal — South Asia Subregional Economic Cooperation Power System Expansion Project (\$15 million)
(xiv)	Maldives — Preparing Outer Islands for Sustainable Energy Development Project (\$50 million)
(xv)	Solomon Islands — Provincial Renewable Energy Project (\$12 million)
(xvi)	Sri Lanka — Green Power Development and Energy Efficiency Improvement Investment Program-Tranche 1 (\$180 million)
(xvii)	Bhutan — Provincial Renewable Energy Project (\$111 million)
(xviii)	Cook Islands — Renewable Energy Sector Project (\$7.26 million)
(xix)	India — Clean Energy Finance Investment Program-Tranche 1 (\$200 million)
(xx)	India — Rajasthan Urban Sector Development Program (\$31 million)
(xxi)	India — ACME Électricité de France Solar Power Project (\$101 million)
(xxii)	India — ReNew Power Ventures Private Limited (ReNew Power Investment Project) (\$50 million)
(xxiii)	India — Rantau Dedap Geothermal Development Project (Phase 1) (\$50 million)
(xxiv)	Thailand — Chaiyaphum Wind Farm Company Limited (Subyai Wind Power Project) (\$83 million)
(xxv)	Myanmar — Yangon Urban Renewal and District Cooling Project (\$3.75 million)
(xxvi)	Georgia — Adjaristsqali Hydropower Project (\$100 million)
(xxvii)	Lao PDR — Nam Ngiep 1 Power company Limited (Nam Ngiep 1 Hydropower Project) (\$221 million)
Adaptation	
(i)	Azerbaijan — Second Road Network Development Investment Program - Tranche 2 (\$30 million)
(ii)	Pakistan — Trimmu and Panjnad Barrages Improvement Project (\$30 million)
(iii)	Kyrgyzstan — Central Asia Regional Economic Cooperation Transport Corridor I (Bishkek-Torugart Road) Project 3 - Additional Financing (\$10 million)
(iv)	People's Republic of China — Guangdong Chaonan Water Resources Development and Protection Demonstration Project (\$2 million)
(v)	Bangladesh — Coastal Towns Environmental Infrastructure Project (\$6 million)
(vi)	Bangladesh — Irrigation Management Improvement Project (\$15 million)
(vii)	Bangladesh — Flood and Riverbank Erosion Risk Management Investment Program (\$ 225 million, first tranche — \$65 million)
(viii)	Bangladesh — Third Urban Governance and Infrastructure Improvement (Sector) Project (\$15 million)
(ix)	Bhutan — South Asia Subregional Economic Cooperation Road Connectivity Project (\$2 million)
(x)	Bhutan — Integrated Road Investment Program (\$2 million)
(xi)	Bhutan — Second Green Power Development Project (\$2 million)
(xii)	Sri Lanka — Integrated Road Investment Program, Tranche 1 (\$15 million)
(xiii)	Sri Lanka — Integrated Road Investment Program, Tranche 2 (\$15 million)
(xiv)	India — Karnataka Integrated and Sustainable Water Resources Management Investment Program (\$72 million)

- (xv) India — Madhya Pradesh District Connectivity Sector Project (\$2 million)
- (xvi) Nepal — South Asia Subregional Economic Cooperation Power System Expansion Project (\$2 million)
- (xvii) Nepal — Third Small Towns Water Supply and Sanitation Sector Project (\$36 million)
- (xviii) Viet Nam – Greater Mekong Subregion Tourism Infrastructure for Inclusive Growth Project (\$40 million)
- (xix) Viet Nam — Second Lower Secondary Education for the Most Disadvantaged Areas Project (\$13 million)
- (xx) Lao People’s Democratic Republic — Greater Mekong Subregion Tourism Infrastructure for Inclusive Growth Project (\$28 million)
- (xxi) Cambodia — Rural Roads Improvement Project II (\$20 million)
- (xxii) Solomon Islands — Transport Sector Flood Recovery Project (\$3 million)
- (xxiii) Solomon Islands — Provincial Renewable Energy Project (\$1 million)
- (xxiv) Fiji — Transport Infrastructure Investment Sector Project (formerly Bridge Replacement Project) (\$10 million)
- (xxv) Tonga — Cyclone Ian Recovery Project (\$1 million)
- (xxvi) Timor-Leste — Road Network Upgrading Project (Additional Financing) (\$2 million)

Source: Asian Development Bank database.

APPENDIX 9: EVALUATION LESSONS FROM PROJECTS TAGGED AS ENVIRONMENTALLY SUSTAINABLE GROWTH

1. IED reviewed the lessons from validations of project completion report validation reports (PVRs) and project performance evaluation reports (PPERs) circulated during 2004–2014 covering projects with an environmentally sustainable growth (ESG) theme. The review covered 69 projects with PVRs and/or PPERs, of which 4 were rated *highly successful*, 49 *successful*, 11 *less than successful*, and 5 *unsuccessful*.

Table A9.1: Distribution of PPERs and PVRs by Sector, 2004–2014

Sector	HS	S	LS	US	Total
Agriculture and Natural Resources		22	6	3	31
Energy	4	4			8
Transport		1	1		2
Water and Urban Infrastructure Services		12	2	2	16
Multisector		10	2		12
Total	4	49	11	5	69

HS = highly successful, S = successful, LS = less than successful, PPER = project performance evaluation reports, PVR = project completion report validation report, US = unsuccessful.

Source: Independent Evaluation Department.

2. Many of the lessons identified in the evaluation reports apply not just to ESG projects but to all projects. Not many lessons were identified that were specific to the environment, or to environmental growth.

3. Frequently identified lessons from *highly successful* and/or *successful* projects relate to factors influencing performance and success of projects. These highlight the importance during project formulation of: (i) strong country ownership and commitment; (ii) due diligence (technical, institutional, social, financial, and political); (iii) a thorough risk assessment and mitigation plan; (iv) careful focus on in-depth institutional analysis; (v) a realistic project design; (vi) legislation and regulations in place before project start-up; (vii) public relations in order to increase public understanding and acceptance of project activities; and (viii) effectively timed TA interventions to support investment projects. During implementation, the following are particularly important: (i) staff retention, training, and human resource development; and (ii) adequate consultation and better communication with affected people for projects with resettlement issues.

4. Project-level evaluation studies also point to the need for: (i) advance actions for consultant selection, procurement, land acquisition, and statutory clearances to avoid implementation delays; (ii) active engagement of stakeholders (particularly executing and implementing agencies) at all stages of the project cycle; (iii) capacity building of executing and implementing agencies; (iv) timely availability of counterpart funding; (v) monitoring and evaluation systems, including establishment of baselines and identification of outcome and output targets and indicators; (vi) adequate supervision and follow-up, particularly through a closely involved resident mission; and (vii) systems in place that result in better transfer of knowledge among projects at formulation and during implementation.

5. Conversely, lessons from *less than successful* and *unsuccessful* projects warn against the perils of: (i) complex and overambitious project design involving multiple agencies during implementation; (ii) delegating responsibility for implementing a project to agencies with insufficient management capacity; (iii) sensitive policy reforms that are separate from physical investments; and (iv) attempting to address several major issues in a single project, even though they may be interrelated.

6. The evaluations of ESG-tagged agriculture and natural resources (ANR), energy, and water projects below¹ are relevant to all projects.

7. **Lessons from agriculture and natural resources projects.** ANR had the highest proportion of ESG projects rated *successful*. Many of these projects were multifaceted and built on complementarities, but they themselves were not necessarily multisectoral. These projects incorporated a greater mixture of community participation, private sector involvement and institutional capacity building to enable markets to function efficiently. Investments in irrigation, rural roads, rural power supply, and rural finance all contributed to agricultural productivity, but in order to gain the maximum benefits, but investment in farms was also critical. This often included the introduction of conservation practices and new technologies which benefit the environment. For example, an evaluation found that provision of credit alone without technological improvements would not produce the desired improvements in farm technology.

8. Many evaluation studies reaffirmed the benefits of community involvement and empowerment in natural resource management and a participatory approach to resource management. It was found that involving only a limited number of nongovernment organizations (NGOs) improved community involvement and facilitated monitoring and evaluation. However, evaluation studies also cautioned against participatory resource management projects involving overly complex arrangements with beneficiaries, intermediaries such as community-based organizations or NGOs, and implementing agencies.

9. **Lessons from water projects.** The ESG-tagged water project evaluations highlighted a number of issues. Water projects contributed to inclusive and environmentally sustainable growth but their complexity slowed the implementation of projects. This was particularly true when water components were integrated with other urban priorities. A phased approach and support over a longer time period may be needed.

10. In water project designs, mainstreaming efficiencies in water use was often a key objective. Project designs also supported increased investments in wastewater management and reuse, including sanitation. However, effective wastewater management was generally given a low priority by governments and the people. Consequently, wastewater tariffs, if established, are often a fraction of water supply tariffs even though their capital and operating costs can be just as high. This issue of operation and maintenance applies to most projects and a general lesson is that projects that require continuing operation and maintenance must have a stable cost recovery mechanism. This should have two key elements: beneficiaries' willingness and ability to pay, and institutions' capacity to impose and collect tariffs.

11. Box A9.1 shows how the Karnataka Urban Development and Coastal Environmental Management Project addressed the issue of financial sustainability and the integration of ESG environmental co-benefits into urban sector projects.²

12. **Lessons from energy projects.** Of the eight energy ESG projects with evaluation reports, four had lessons pertinent to the environment or ESG. These were all PRC projects and may be considered demonstration projects, which provide specific lessons focused on particular issues. For instance, with regard to valuing energy savings, an evaluation of a PRC project³ underlined the importance of (i) establishing a baseline and designing a customized measuring and valuation method for verifying

¹ The project completion report validation reports (PVRs) for two ESG-tagged transport projects—Metro Manila Air Quality Improvement Sector Development Program Air Pollution Control Facility (Loans 1663/64/65-PHI) and the Mumbai and Chennai Ports Project (Loans 1556/57-IND)—did not identify any sector-specific lessons.

² ADB. 1995. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to India for the Karnataka Urban Development and Coastal Environmental Management Project*. Manila.

³ IED. 2014. *Validation Report: People's Republic of China: MFF: Guangdong Energy Efficiency Environment Improvement*. Manila: ADB.

energy savings, at the outset, and using the same methodology for *ex ante* and *ex post* savings calculations; and (ii) use of a third-party measuring and valuation agency to ensure a fair assessment of energy savings and emissions reductions. With respect to pollution pricing, the PPER for a PRC environmental improvement project⁴ highlighted the challenge of designing a market-based instrument for pollution control, making it work, ensuring it is widely accepted, and achieving the intended results. The evaluation found that if a pollution levy system is not punitive enough it may not act as deterrent to polluters and or encourage enterprises to invest in pollution abatement. The evaluation for another energy project,⁵ which was assessed *highly successful*, discussed the importance of a strong commitment from power companies to address the social and environmental impacts of hydropower development projects during preparation and establishing an independent mechanism at project startup to monitor progress in realizing planned social and environmental benefits.

Box A9.1: Public–Private Partnership Arrangements for a Sewage Treatment Plant and Sanitary Landfill in Mangalore, India

Mangalore is a port town in Karnataka state in South India, with a population of 488,000. Like many other cities in coastal India, it has grown rapidly since the late 1990s. In 1999, ADB agreed a \$175 million loan for the Karnataka Urban Development and Coastal Environmental Management Project. The project supported water, sanitation, waste management and other urban infrastructure investments in Mangalore and nine other cities along the west coast of Karnataka.

Under the project, Mangalore built four new sewage treatment plants (STPs). The city government had a cost-sharing agreement with a special economic zone to operate and maintain one of the plants in return for the SEZ's use of the treated wastewater for industrial water needs (e.g., for oil refinery cooling water) and 30% of the operation and maintenance cost contribution. Treated effluent from the plant is pumped, at the SEZ's expense, from the plant to the SEZ location. The plant currently treats 12–13 million liters per day (MLD) of wastewater (its maximum capacity is 40 MLD). Based on population growth projections, in 10 years the sewage treatment plant will be operating at close to its maximum capacity.

A sanitary landfill in Vamanjoor, Mangalore, is also operated by a private company under a 5-year contract with the city government. The company earns revenue by charging the city Rs238 per ton of waste delivered. It earns additional revenue from selling compost. Under the agreement with the city government, 80 tons of the compost it produces is allotted free of charge to the city each month. The rest is sold at Rs2, 500 per ton. Since the company started operating the Mangalore facility in 2013, 1,800 tons of compost have been produced.

Source: Independent Evaluation Department.

A. Country Lessons: The People's Republic of China

13. The PRC country assistance program evaluation (CAPE) in 2015 included observations related to ESG that are highly relevant to the present discussion. The CAPE noted that there had been “a strategic repositioning of ADB’s program as follows: (i) a reduced overall share of support for infrastructure, with a corresponding increase mostly for projects in agriculture and natural resources (ANR); (ii) more diversified infrastructure support with a reduced share for transport; (iii) a phase-out of support for expressways and a ramping-up of support for sustainable transport options, logistics, and safety; (iv) an emphasis on innovations in the design of investment projects in ANR, energy, transport, and urban development; and (v) greater emphasis on knowledge support across all major areas of engagement.”⁶

⁴ IED. 2009. *Project Performance Evaluation Report. People's Republic of China: Shanxi Environment Improvement Project*. Manila: ADB.

⁵ IED. 2013. *Project Performance Evaluation Report. People's Republic of China: Gansu Clean Energy Development Project*. Manila: ADB.

⁶ IED. 2015. *People's Republic of China: Country Assistance Program Evaluation*. Manila: ADB.

14. The CAPE noted this repositioning was due in part to a growing awareness within the PRC that the natural environment had been degraded enormously due to rapid industrialization, urbanization, and intensified agricultural production, while the PRC's contribution to global carbon emissions had also risen sharply. As a result, the government was seeking to induce comprehensive changes to the national growth model, including reversing environmental degradation. This would mean cleaning and protecting the environment and efficiently utilizing natural resources, while strengthening governance and institutional capacities to provide public goods and services, including policies, rules and systems.

15. While the CAPE did not specifically assess performance with respect to ESG, it rated the country program overall as *relevant* and *successful* and found that completed energy, transport, and urban development projects had met or exceeded expectations. There was no sign that ongoing projects would be less effective. It also affirmed that ADB should vastly increase its support for addressing climate change and protecting the environment. In consultation with the government, ADB can identify certain well-defined areas where it can make visible contributions to the government's programs. This will require a mix of activities that, when combined, can demonstrate ways of achieving an inherently clean, resource-efficient, and climate-friendly growth path. For example, ADB could aim to improve air and water quality improvement in a selected city, or to reduce negative regional spillovers caused by the discharge of industrial effluents into a river that ultimately flows into the open sea, or to support the establishment of a national carbon emission trading regime.

16. The CAPE also found that ADB had worked to include environmental dimensions in projects. ADB had accessed grant resources from the Global Environment Facility (GEF) and other funds, and had been able to contribute significantly to project design (Box A9.2).

Box A9.2: Sanjiang Plain Wetlands Protection Project in the People's Republic of China

The Sanjiang Plain wetlands comprise one of the richest areas of globally significant biodiversity, particularly water birds, in the People's Republic of China. The area of the wetlands has been reduced by 80% from its size in the 1950s because it has been subject to multiple pressures, most notably drainage to reclaim land for farming. An ADB loan for \$15.0 million was cofinanced under a Global Environment Facility (GEF) grant of \$12.1 million that was administered by ADB. The project aimed to achieve an integrated conservation and development model to protect the natural resources (biodiversity, water, forests) of the Sanjiang Plain wetlands and their watersheds from continued threats while improving the well-being of local communities.

Environmentally sustainable alternative livelihoods provided to affected persons were mainly in (i) forest resources management and forest product collection (for farmland-to-forest sites), and (ii) wetland attendance and wetland ecotourism (for farmland-to-wetland sites). Of the survey respondents, 95% were either satisfied or very satisfied with their alternative livelihoods and said their incomes had been maintained or increased. This evaluation clearly demonstrated that the project's pioneering and successful provision of alternative livelihoods through noncash compensation or in-kind support can work in wetland restoration projects.

For the first time, wetlands were now considered to be a water user and a part of the water allocation decision-making process for nature reserve master plans and broader river basin plans. Biodiversity gains in terms of total bird numbers, as well as estimates of other wetland target plant and animal species, were inconclusive although successful breeding and recruitment of some target endangered bird species in the Sanjiang Plain was achieved. The project demonstrated that the challenges in monitoring ecological and biodiversity gains should not be underestimated. Significant investments in training, supporting technologies (e.g., remote sensing), and institutional capacity development were needed. Overall, the project has performed well, has had a significant impact on wetland protection, and has demonstrated potential to be scaled up.

Source: Independent Evaluation Department.

17. **Innovative approaches in other sectors.** ADB has introduced significant innovative design features to address agricultural modernization, water resource management, ecosystem restoration, and other environmental protection objectives. The same is true of other sectors, for example: (i) cutting-edge green energy generation technologies (e.g., Tianjin Integrated Gasification Combined

Cycle Power Plant and Qinghai Delingha Concentrated Solar Thermal Power);⁷ (ii) new practices to modernize agriculture (e.g., Shanxi Integrated Agricultural Development);⁸ (iii) sustainable transport from a maintenance perspective (e.g., Yunnan Sustainable Road Maintenance)⁹ and for a clean environment (e.g., Hunan Xiangjiang Inland Waterway Transport Project);¹⁰ and (iv) urban wastewater reclamation (e.g., Shandong Hai River Basin Pollution Control)¹¹ and reuse and geohazard control measures for urban development (e.g., Anhui Chao Lake Environmental Rehabilitation Project).¹² Most completed and ongoing loan projects meet both ADB's environmental sustainability goals and the PRC's environment protection priorities.¹³

18. The CAPE's implicit assessment of ADB's performance with respect to ESG in the PRC was positive. It pointed to both the breadth and innovativeness of the approaches introduced during the evaluation period, as well as to the significant evolution of ADB support in important sectors such as ANR, energy, transport, and urban development. For ADB, the experience of greening the PRC portfolio can have a demonstration effect for its work in other countries. It has also built ADB's internal skills and capacity to undertake projects that provide more explicit environmental sustainability benefits.

⁷ ADB. 2010. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Tianjin Integrated Gasification Combined Cycle Power Plant Project*. Manila; and ADB. 2013. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Qinghai Delingha Concentrated Solar Thermal Power Project*. Manila.

⁸ ADB. 2009. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Shanxi Integrated Agricultural Development Project*. Manila.

⁹ ADB. 2013. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Yunnan Sustainable Road Maintenance (Sector) Project*. Manila.

¹⁰ ADB. 2012. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Hunan Xiangjiang Inland Waterway Transport Project*. Manila.

¹¹ ADB. 2006. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Shandong Hai River Basin Pollution Control*. Manila.

¹² ADB. 2012. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of China for the Anhui Chao Lake Environmental Rehabilitation Project*. Manila.

¹³ IED. 2015. *County Assistance Program Evaluation: People's Republic of China*. Manila: ADB.