Maximizing Environmental Benefits and Climate Proofing Transport Projects

14-15 October 2013 | ADB Headquarters, Manila, Philippines

Workshop Proceedings

Contents

Executive Summary

Resilient transport is vital to the social and economic well-being of citizens across Asia and the Pacific. At the same time, transport is responsible for a number of negative impacts on the environment, including greenhouse gases, air pollution, noise, vibration and biodiversity losses. The Asian Development Bank (ADB) recognizes the increasing urgency to achieve net environmental benefits as well as ensuring climate resilience of new investment projects in the transport sector. The Climate Change and Environment Advisory Team of the Transport Community of Practice conducted a training workshop in October 2013 to address the challenges posed by methodological difficulties, resource constraints and limited capacity of ADB staff working on environment and climate change in the transport sector.

The two day training workshop provided a venue for the participants to share experiences and find ways to mainstream climate change adaptation in the design, construction and maintenance of transport projects while maximizing environmental benefits. It also brought back the focus on environmental issues, such as biodiversity and air pollution, while continuing to address climate change.

The training workshop was well attended by 51 ADB staff from all Regional Departments, Regional and Sustainable Development Department (RSDD) and selected Resident Missions (India, Timor-Leste and Viet Nam together with Uzbekistan via video conference) as well as 4 external resource persons.

The workshop identified concrete actions the Bank can implement to maximize environmental benefits and effectively climate proof transport projects.

1. Background

Strategy 2020, ADB's strategic framework for 2008 to 2020, identified environmentally sustainable growth as one of three top development agendas. Environment, including climate change, is one of the five core areas of specialization supporting the three strategic agendas. Consistent with Strategy 2020, the Bank's Environmental Operations Directions (EOD) 2013-2020 has identified four mutually supportive environmental operations directions to: (i) promote a shift to sustainable infrastructure, (ii) invest in natural capital, (iii) strengthen environmental governance and management capacity, and (iv) respond to the climate change imperative. The EOD is aligned with key thematic operational plans, such as the Sustainable Transport Initiative Operational Plan (STI-OP), wherein environmental sustainability is a priority.

Climate change has become an important topic in recent years. The impacts of climate change in Asia and the Pacific range from rising sea levels to melting glaciers all with catastrophic consequences if not abated. ADB recognizes that combined with other environmental strains, climate change could reverse hard-won development gains in the region. Thus, it is necessary for ADB staff to have a deeper understanding of the different aspects of climate change and how it affects the Bank's operations to alleviate poverty.

There is an increasing urgency to achieve net environmental benefits as well as ensuring climate resilience of new investment projects. However, methodological difficulties, resource constraints and limited capacity of staff limit the current efforts. As part of wider efforts to address these challenges, the Climate Change and Environment Advisory Team (CCE-AT) of the Transport Community of Practice (TCoP) is focused on implementing activities to discuss challenges unique to the transport sector.

As part of these efforts, the CCE-AT of TCoP led by Karma Yangzom, Environment Specialist, SATC, with support from the environment community of practice (ECoP) and Regional and Sustainable Development Department (RSDD), organized a training workshop aiming to take stock, share experiences and find ways to enhance mainstreaming of climate change in the design, construction and maintenance of transport projects while maximizing environmental

benefits. It was also an opportunity to bring back the focus on environmental issues, such as biodiversity and air pollution, while continuing to address climate change.

Day 1 had technical presentations and panel discussions on maximizing environmental benefits and climate change adaptation. It was complemented by a debate on whether adaptation is more important than mitigation for transport. Key recommendations generated were presented to the directors of transport to solicit insights on how to synthesize and catalyze those ideas into actions. Day 2 focused on the calculation of greenhouse gases (GHG) from transport projects, as participants joined the multilateral financial institutions (MFI) GHG subgroup meeting on harmonizing GHG emissions. This was followed by a knowledge sharing presentation on climate change and development. The session in the afternoon discussed the status and timeline to finalize the publication on Climate Vulnerability Assessment wherein most presenters are also contributing authors.

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2. Welcome and Introduction

The training workshop was opened with remarks by Robert Guild, Director, PATE, Co-Chair of TCoP and Javed Hussain Mir, Director, SEER, Co-Chair of ECoP .

After welcoming the participants, Mr. Guild reminded everyone that there have already been 6 trainings this year (on inland waterway transport, bus rapid transit, railways, etc.) organized by TCoP to upgrade the skills of Bank staff, share experiences, obtain new knowledge and continue the dialogue on implementing the STI effectively in collaboration with other CoPs.

Mr. Guild put the workshop in context by focusing on the cross-cutting themes of environment and climate change and how the Bank's business processes could be aligned to meet the challenges of mainstreaming both. He noted that environmental safeguards have been mainstreamed in the Bank's projects for quite some time now but efforts on climate proofing or

building resilience have been done on an ad-hoc basis, despite the fact that climate change has received a lot of attention in recent years. Further, he noted that in the regional departments, there are no systematic or harmonized methods yet to do vulnerability or risk assessment incorporated in the project design.

Climate change is a top concern not only in the Pacific region he serves but also in many DMCs as reflected by the concerns of governments, other stakeholders and the Board to ensure Bank's projects are climate resilient. He highlighted the importance of the training workshop, of making transport projects climate resilient, by stressing that projects only deliver benefits if the assets remain in good condition and usable. He encouraged the participants to come up with actionable recommendations to enhance sustainable transport in terms of better vulnerability assessment, risk management and improved resilience. He closed his remarks by posing the challenge – what can you do to make those recommendations happen?

Javed Hussain Mir, Director, SEER and co-chair of ECoP contextualized the workshop from the ECoP perspective as environment is one the five core pillars of ADB's Strategy 2020. He elaborated in his remarks the four mutually supportive directions of the Bank's EOD 2013-2020 and their relevance to the transport sector.

On transport and environment operational interface, noting that transport comprises one third of the Bank's investments, Mr. Mir recognized the growth and development transport brings, which are necessary to alleviate poverty in Asia and the Pacific. But if not done right or aligned right, roads or increase in road density could be a negative indicator from an ecosystem protection perspective. Increasing surface transport means increasing air pollution and GHG emissions, and induced impacts lead to land use change and fragmentation of ecosystems. He therefore stressed the need for greater cooperation between people working in the environment and transport sectors to work together to lessen the negative impacts of transport.

Mr. Mir also highlighted that there are ways to promote environmentally sustainable transport which could also generate more co-benefits. Upstream multi-criteria analysis can be employed to ensure better project design planning. At the project level, environmental safeguards and climate proofing guidelines can be used to reduce local impacts. He reiterated the need to strengthen in-house capacity to respond better to the needs of DMCs and shared his high expectations in the training workshop to come up with recommendations that could advance the implementation of STI and even Strategy 2020.

3. Maximizing environmental benefits

a. Evolution of ADB's environment agenda and its implications for the transport sector

A keynote presentation was delivered by Vidhisha Samarsekara, Senior Climate Change Specialist, INRM, to provide an overview of how ADB incorporated environmental concerns in its operations over time, what has been the role of the transport sector in this regard and what are the next steps on how to go beyond safeguard compliance.

Ms. Samarsekara discussed the evolution of ADB's environment agenda starting from a signed declaration of environmental procedures relating to economic development in the 1980s to the current Safeguards Policy Statement (SPS) approved in 2009. Traditionally, the focus had been on safeguarding the environment following a precautionary or reactive approach. She shared that currently, it is transitioning to go beyond compliance adopting a proactive and innovative approach.

In the transport sector, Ms. Samarsekara mentioned that the STI was conceived in response to a paradigm shift taking the avoid-shift-improve strategies to advance the provision and use of mass transport systems, more fuel-efficient vehicles, cleaner fuels, and sound planning of urban mobility. She presented some examples of environmentally sustainable transport projects undertaken by ADB – Bangladesh BRT, Lanzhou BRT and Kathmandu Sustainable Urban Transport Project – highlighting that those projects can also receive co-financing from climate-related funds such as Global Environment Facility (GEF) and Clean Development Mechanism (CDM). Moving forward, it is envisioned that the share of urban transport in the ADB portfolio will continue to grow from 2% in 1970-2009, 18% in 2010-2012 to 30% by 2020.

b. Panel Discussion: How to maximize environmental and other benefits of transport projects?

The panel was composed of Bruce Dunn, Senior Environment Specialist, RSES; Sonia Sandhu, Senior Environment Specialist, SEUW; Karma Yangzom, Environment Specialist, SATC; Robert Earley, Clean Air Asia (CAA). Ko Sakamoto, Transport Economist, RSID, moderated the interactive discussion by posing questions to the panelists and soliciting feedback and additional questions from the audience. Two presentations were made to jumpstart the discussion, of which the highlights are as follows:

Bruce Dunn: Minimizing ecological impacts of transport projects

Mr. Dunn spoke on the value of biodiversity ecosystems focusing on biodiversity in Asia and the Pacific. While recognizing the need for roads, he also identified the negative impacts of roads in terms of loss of habitat, fragmentation of habitat, edge effects, increased fire risks, noise pollution, increased access for poaching, and induced development. He suggested practical interventions and shared examples to lessen the conflicts between roads and ecosystems by (i) improving road planning and design highlighting the need for a multi-level approach, (ii) applying strategic environmental assessment in economic development corridors with high biodiversity conservation landscape, and (iii) application of mitigation hierarchy for project design options.

Robert Earley: Reducing Emissions and Pollution in Transport

Mr. Earley shared his thoughts on the challenges of incorporating environmental components in assessing transport projects. In terms of pollution and emission reduction, he noted that going beyond compliance is difficult as basically any additional transport project will add on to the existing aggregate emission and pollution. To better demonstrate the benefits of a sustainable transport project, he highlighted the use of Transport Emissions Evaluation Model for Projects (TEEMP) developed by CAA and partners which was initially funded by ADB. The latest iteration of the tool is now capable of doing rapid assessment of city emissions by combining transport and planning. His recommendations focused on packaging transport co-benefits beyond GHG emission reduction and also measure co-benefits of sustainable transport projects in terms of improvements in air quality, time savings, fuel savings and health benefits to receive more support.

c. Key points from the panel and participants discussion

The presentations and the panel discussion highlighted a number of key points. These include:

- *Need for holistic ways in addressing transport problems*. A transport project is not just an infrastructure project as it has significant impacts in the surrounding environment and/or community. It should be viewed in harmony with overall land management. There is a need to explore possibilities to leverage larger vision of transport projects in terms of benefits to communities and environment locally and reduction of GHG emissions globally to gain support of DMCs for sustainable options to move people and freight.

- *Break silos*. Coordination among task managers is critical to ensure that a transport project does not solve a problem (e.g. providing access) by creating or transferring more problems (e.g. displacement of people or increased animal road kills). As an engrained business strategy, cross-sectoral collaboration leads to better planning, cost-efficient strategies, better project acceptance of intended communities and foster greater learning among ADB staff.
- *Entry points - the earlier, the better*. Ideally, interventions to integrate environmental and climate change aspects should be done upstream during discussions between ADB and DMCs in preparation for the Country Partnership Strategies (CPS). Else, there are ways on how to improve environmental soundness and climate proofing of transport projects during the implementation stage albeit limited in scope and at additional cost.
- *Engage and communicate effectively*. Generally, environment and climate change issues are not yet high in the agenda when governments decide on their development and investment priorities. Recognizing that impacts of environment and climate change issues are becoming major game changers, there is a need to engage and communicate more with DMCs to understand local implications and thresh out issues. For example in the transport sector, environmentally sustainable transport options are well-known but are often perceived to be expensive or difficult to implement due to lack of know-how. As a knowledge Bank and a responsible partner, ADB can help enlighten these issues by engaging DMCs to dialogues, provide enabling environment for policymakers to learn together such as in the biennial Transport Forum, and support creation of tools and research to generate more knowledge on the subjects.
- *Make co-benefits count*. Highlighting options that maximize environmental benefits in terms of improved air quality, preservation of biodiversity, job creation, and improved road safety add value to otherwise traditional transport projects ADB implements. The climate co-benefit of reducing GHG emissions could be leveraged to access climate related funds. These projects could also be linked to DMC's efforts on nationally appropriate mitigation actions (NAMAs).

4. Climate change adaptation

a. An overview of the latest development on climate change

A keynote presentation was jointly given by Preety Bhandari, Advisor, Climate Change Program Coordination Unit, RSDD and Ko Sakamoto, Transport Economist, RSID, to provide an overview of the latest debates, agreements on climate change at the global level and between multilateral development banks (MDBs).

Ms. Bhandari gave an overview of the latest developments on the climate change negotiation front. She shared the highlights from the talks in Durban through Doha and the expectations from Warsaw. Among the points she mentioned was the recent developments in the Green Climate Fund (GCF). Its Board had their 5th meeting on 8-10 October in Paris with no definite date yet for raising new funds, but there is a window for ADB to work closer with GCF through the Philippines who co-chairs the GCF Board for a year together with Germany. Progress on NAMAs with the forthcoming official launching of the NAMA Registry were deemed very timely and relevant as ADB prepares to have a significant role in the GCF as an implementing entity and be able to assist the DMCs as they prepare their NAMAs and apply for support when the GCF opens for business in the later part of 2014.

Some relevant internal developments were also shared. Risk screening is now mandatory as per the President's Planning Directions 2013-2015. The Climate Change Fund (CCF) was recently replenished with USD 4 million each for adaptation and mitigation, which could support climate risk vulnerability assessments (CRVA). She also mentioned the availability of tools and guidelines that could aid climate-proofing of ADB projects, e.g. AWARE for projects at risks and "Guidelines for Climate Proofing Investment in the Transport Sector" for transport projects.

Mr. Sakamoto shared the latest discussions and agreements on climate change and transport among MDBs. The 8 MDBs made a joint statement and voluntary commitment to the Rio+20 United Nations Conference on Sustainable Development to collectively mobilize USD175 billion for more sustainable transport in developing countries over the next decade. To implement the commitment, representatives from the MDBs are working together to define and harmonize the approach to monitoring and reporting. He mentioned that ADB's work on the Sustainable Transport Appraisal Rating (STAR) framework, which is a multi-criteria assessment framework to identify what constitutes as sustainable transport project – is helping guide the decisions on this common monitoring and reporting framework. He showed how STAR was applied on ADB projects approved in 2012 to assess their levels of sustainability.

b. Debate: Is adaptation more important than mitigation?

Sharad Saxena, Senior Transport Specialist, EATC moderated the debate. The panel *for the motion or adaptation team* was composed of Ma. Antonia (Toni) Yulo Loyzaga, Executive Director of Manila Observatory, Charles Rodgers, Senior Environmental Specialist (Climate Adaptation), RSES, and Kristina Katich, Urban Development Specialist, EARD. The members of the panel *against the motion or mitigation team* were Glynda Bathan, Clean Air Asia, Lloyd Wright, Senior Transport Specialist, RSID, and Ko Sakamoto, Transport Economist, RSID.

The debate started with Mr. Saxena asking all the participants the question “to what extent would you allocate investment resources on adaptation and/or mitigation?”. The responses leaned towards 25% adaptation, 75% mitigation. The responses were sent and counted by e-balloting.

The adaptation team made their case highlighting the importance of adaptation to protect short-term gains necessary to foster development. It was noted that DMCs prioritize adaptation as the current situation already calls for it, e.g. to cope with 20 typhoons in the Philippines, frequent flooding in GMS countries or sea level rise in the Pacific island-countries and that ADB as a development bank should assist DMCs in protecting the assets it built. They also argued that adaptation finance from MDBs could become a game changer, as opposed to mitigation efforts in which almost 75% of climate finance is already provided by the private sector. Thus, for MDB climate financing to make a difference, it should be invested in adaptation projects which is what DMCs also need.

The mitigation team framed their arguments on the point that if planning decisions or other hard choices were made right from the start, there will be no need for adaptation. They associated adaptation as encouraging the status quo by doing more of the same, just delaying the problem without addressing the bottom issues akin to getting bigger pants when gaining weight or using air condition units when it gets hotter. They deemed that investments on erecting sea walls or making culverts bigger could have better impact if invested for example on low carbon sustainable transport system which not only results to lesser GHG emissions but also cleaner air, safer roads, and job creation thereby improving the overall quality of life.

In between the lively exchange of arguments between the two teams, the audience was asked to vote on which types of projects to invest in: mitigation or adaptation. The respondents selected more mitigation projects. The moderator also revisited the same question at the end of the debate. Although mitigation received more votes, adaptation gathered some shifters.

In closing, Mr. Saxena explained that both climate adaptation and mitigation actions are equally important. What is needed is to scale up efforts. He closed the debate session stating that it is necessary to mainstream climate change to the Bank's business processes and for the Bank to have a bigger role in assisting DMCs to adapt and mitigate climate change impacts.

c. Panel discussion: Experiences and challenges in adaptation in the transport sector

The panel was composed of AKM Mahfuzuddin Ahmed, Principal Climate Change Specialist, SAOD; Rustam Ishenaliev, Transport Specialist, SETC; and Le Thi Thanh Huyen, National Environment Consultant, VRM. It was moderated by Vidisha Smarsekara, Senior Climate Change Specialist, INRM. The panelists made presentations and had meaningful exchange with participants on their experiences on adaptation of transport projects while pondering on additional necessary actions vis-à-vis the uncertainty of the future climate. Key lessons, challenges and areas for improvement were shared during the discussion.

AKM Mahfuzuddin Ahmed: Experiences and challenges in adaptation in the transport sector

Mr. Ahmed made a presentation on experiences and challenges in the transport sector specifically on risk assessment. He touched upon how to identify the risks, how to address risks in the project level and what are the available tools and methodologies for climate change risk screening. He shared the architecture and details of the climate risk screening system implemented at SARD.

Further, he highlighted the climate parameters to look at when screening transport projects – temperature, precipitation, and sea-level rise. He noted that some transport project components are sensitive to extreme weather conditions. For example in case of heavy precipitation, road embankments may erode, drainage may overflow, pavement may soften and rut, etc. He suggested establishing a systematic and efficient climate knowledge base to address the problem of scarce data and information, enhance capacity of DMCs, and implement monitoring and evaluation along the project's life span.

Rustam Ishenaliev: Central Mekong Delta Region Connectivity Project in Viet Nam

Mr. Ishenaliev shared his experience in climate-proofing a transport project given its location has less than 1m elevation above sea level with weak soil structures, mobile river banks and generally prone to flooding. Among the identified threats to the bridge infrastructure based from

the climate change vulnerability assessment, the most critical was the changes in flood water levels on embankment design elevations which required raising the design height by 0.6m. The design height for embankments was raised by 0.3m in agreement with the Ministry of Transport and will be raised higher in the future as more evidence will be available while the design height of 6 bridges not subject to navigation clearance requirements were raised to 0.6m. The cost of climate-proofing, i.e. raising embankments and bridges amounted to USD 4.5 million which was covered by the project contingency costs.

Based from his experiences, he suggested that risk and vulnerability assessments need to be incorporated in the project feasibility and detailed design so the cost implications will be included early on. Also, a cautious approach is suggested in weighing different response scenarios in making investments in climate change adaptation taking into consideration the country's environment policy, available funding sources, and specific threats and vulnerabilities.

Le Thi Thanh Huyen: Climate change and road transport projects in Viet Nam
Ms. Huyen shared how adaptation to climate change was addressed in ADB road projects in Viet Nam – slope stabilization using a variety of bioengineering methods were introduced in rural road projects, in response to increased rainfall intensity by 30% and extreme rainfall events by 25% improved climate resilience and road safety were included in the national highway design thereby raising embankments, increasing drainage facilities and updating flood management and control plans. However, she noted the uncertainties of climate change scenarios and the lack of appropriate technical standards and guidelines that can be utilized on the ground. Further, timing is critical to incorporate the results of climate change impact assessments as there are limited chances to revise the road alignment at project implementation stage.

Some practical suggestions were shared by Ms. Huyen based on their experiences in Viet Nam: (i) incorporate the results of climate change impact assessment early on in the development of master plans, (ii) identify task and funding allocation, (iii) review technical standards and guidelines to ensure climate change and flood management are considered, and (iv) organize training and learning events to build capacity in DMCs.

d. Key points from the panel and participants discussion

The presentations and the panel discussion highlighted a number of key points. These include:

- *Need for guidance on climate vulnerability assessment*. Currently, assessments are conducted on an ad-hoc basis. CCF can be tapped to fund climate vulnerability assessment if needed in the project. The planned publication on "Climate Vulnerability Assessment" will fill the huge void as there is a dearth of information on ground realities on how it is being implemented.
- *Need for operational guidance on climate proofing.* Climate change impacts are changing the status quo on how to plan, design and construct transport projects. There are many variables to consider and there is no 'one size, fits all' model or guidance yet on how to account for climate impacts. There are tools available such as AWARE that can help assess options for better decision making. ADB's "Guidelines for Climate Proofing Investment in the Transport Sector" is also available but there is a need for technical standards and

operational guidelines to address climate proofing systematically. Further, follow-up technical training workshops on operational issues are suggested to have a deeper understanding of the science and possible strategic measures to be more effective in assisting DMCs on the ground.

- *More information and experience sharing.* Dissemination of both successful and failed climate proofing measures is necessary as knowledge accumulates through learning by doing on the ground. Relevant information helps in making informed decisions considering that climate proofing of transport projects is becoming an imperative in many critical areas in the region.
- *More funding for adaptation is needed.* Critical infrastructure in many DMCs should be climate resilient to ensure long term use and viability. However, some DMCs think that climate adaptation measures should only be funded by grants. ADB can leverage its grant and TA funding to demonstrate that investing in adaptation is to the best interest of DMCs to protect their long-term assets. Also, the Bank can add value to its traditional portfolio by investing on adaptation projects which are becoming priority in many DMCs.

5. Participation in the meeting of the Multilateral Financing Institutions Subgroup on Greenhouse Gas Emissions Accounting

On the second day, training participants joined representatives from MFIs who were gathered to review and share experiences on how they measure GHG emissions and harmonize their methods.

Ko Sakamoto shared ADB's practices hinged on the avoid-shift-improved strategies towards low carbon transport. ADB commissioned some studies and tools (e.g., TEEMP) to effectively measure and monitor the carbon footprint of transport projects but application to funded projects is not yet mandatory. He also mentioned ADB's work on the STAR framework, which is a multi-criteria assessment framework to identify what constitutes as sustainable transport project to help guide decisions on common monitoring and reporting mechanism. Continued efforts are required and the ADB is keen to continuously work with MFIs to find ways on how to harmonize approaches to measure and evaluate transport GHG emissions.

6. Knowledge sharing presentation on "Climate Change and Development"

Karma Yangzom condensed the highlights of a two-week short course on Climate Change and Development given by the Tyndall Centre for Climate Change Research at University of East Anglia in the UK. The discussion afterwards was moderated by Sri Widowati, Director, SATC.

Ms. Yangzom covered the history and politics of climate change as well as the science behind it. There is uncertainty in climate data but decisions have to be made without precise numbers. She shared that efforts to maintain climate change at 2°C above pre-industrial levels remain as the target, although we may need to adapt for 4°C. The discussion on climate risks and adaptation resonated well with the concerns of many DMCs especially on the question of where the financing will come from. In engaging DMCs, she stated that focusing on co-benefits maybe a better way to address climate change. In closing, she stressed that aligned with Bank's mandate, lifting people out of poverty is one of the best ways to adapt to climate change.

7. Discussion on next steps, responsibilities and timeline for finalizing the publication on Climate Vulnerability Assessment

The CCE-AT is currently leading efforts to develop a publication which will review and document the approaches of ADB regional departments to climate change risk analyses and integration of adaptation in the transport sector. There was a brief meeting among contributors to review progress, clarify issues on contents and focus, and set timelines for draft submission. The publication is targeted for early next year.

8. What's next? Translating recommendations into actions

The training workshop covered various important issues on environment, climate change and their implications to the transport sector. The presentations and subsequent discussions highlighted the importance of maximizing environmental benefits while climate proofing transport projects. ADB business processes have already put in place necessary safeguards but there are avenues for improvement.

The key messages arising from the presentations and discussions were presented by Karma Yangzom to the Directors of transport to seek their insights on the relevance of the recommendations, how to prioritize and transform them into doable actions.

Generally, the key messages touched upon the need to:

- Be more proactive and go beyond the "do no harm" approach. For this purpose, conduct environmental assessment that capture interactions of transport projects with larger ecosystems.
- Ensure upstream intervention, ideally at CPS level, as minimal changes can be incorporated at the implementation stage.
- Consider climate proofing as part of preventive maintenance.

To meet the above, it was noted that further work is needed to (i) develop tools and data, (ii) facilitate knowledge sharing and management, (iii) build capacity of ADB staff and DMCs, and (iv) identify new sources of funding.

Overall the Directors appreciated the quality of recommendations generated by the training workshop. They recognized the need to integrate climate change and environment in the Bank's business processes as early as possible, ideally in the CPS, noting that limited interventions are possible in the project level and often turn out more costly. Actions needed now are beyond the "doing no harm" norm. The pro-active stance of the recommendations was well received. More interdisciplinary or cross-sectoral coordination among Bank staff and other partners following a broader system wide approach was encouraged.

Moving forward and to operationalize the recommendations, selected concrete suggestions from the Directors are as follows:

- Sri Widowati, Director, SATC, suggested pilot-testing in a small country the integration of climate change and environmental impact assessments in the CPS. She agreed that ADB is shifting to more proactive ways of generating environmental benefits in projects. To make it more effective, she recommended that further discussions be held to identify who should take the lead role in integrating environmental benefits in ADB projects.

- Shakeel Khan, Lead Portfolio Management Specialist representing Xiaohong Yang, Director, CWTC, suggested optimizing the use of RSDD's Technical Assistance (TA) budget to focus on the transport sector. Recognizing the current practice of addressing climate risks in an ad-hoc manner, he suggested raising greater awareness within ADB and in DMCs. The awareness generation strategy should be followed up by conducting targeted workshops at the regional level to create actions and ensure that actions will follow at the operational level.

- Robert Guild, Director, PATE, expressed three priority areas that needed further improvement: (i) better tools for climate risk assessment and adaptation, (ii) better design guidelines for infrastructure, and (iii) better tools for economic and financial analysis including climate adaptation to demonstrate to DMC's that covering adaptation costs is a sound investment strategy. He also suggested bringing the knowledge in RSDD and operational departments together to have a more harmonized approach to knowledge sharing and awareness raising.

- Gil Hong Kim, Director, RSID, recognized that adaptation is the area where ADB can add more value. He noted the importance of using ADB's investments to leverage those by the DMCs who are now increasingly capable of implementing conventional transport projects on their own. With the development of new global financial resources for climate change such as the Green Climate Fund (GCF), he stressed the need for better project readiness for tapping such kind of resources. He also stressed the need for science based risk assessments with local level data and suggested partnering with regional or global institutions in specialized fields. He pointed out "green infrastructure" as a cheaper way of addressing environmental as well as climate change impacts. Finally, he recognized the need for technical guidance notes or manuals to aid the climate-proofing of transport projects. He suggested that if those materials are available elsewhere, ADB can access, modify and adopt it. Else, ADB can develop of such technical guidance notes or manuals utilizing RSDD TA funds.

Concrete steps forward, taking into account the feedback from the directors, are listed in the subsequent table, where actions are split between (i) tools and data, (ii) knowledge sharing and management, (iii) capacity building and (iv) financing. The specific details on who will take the lead and how to operationalize the actions will be explored further in the preparation of CCE-AT work plan for 2014 in consultation with network members and representatives from RSDD and other CoPs.

Topic	Action needed
Tools and data	• Provide operational guidance to incorporate climate change impacts • Support building of climate change database • Suggest appropriate tool to measure GHGs from transport sector
Knowledge sharing and management	• Break silos, coordinate and work with other sectors • Enhance sharing of experiences and knowledge within ADB
Capacity building	• Strengthen technical capability of Bank staff and DMCs • Empower RMs to effectively carry messages to DMCs • Need for technical training on available tools
Financing	• Create additional financial resources to conduct CVRA • Create additional financial resources to fund larger ecosystem level studies

9. Evaluation

The training workshop intended for participants to (i) understand ways to achieve net environmental gains and go beyond satisfying safeguards compliance requirements, (ii) be updated on current technical approaches and assessment to ensure "no net loss of biodiversity" in implementing transport projects, (iii) be informed on technical and financial measures to climate proof transport projects, and (iv) understand challenges and areas for improvement in climate proofing transport projects.

The learning objectives were achieved through a combination of presentation sessions (given by Bank staffs and external resource persons), interactive debate, and lively discussions among participants and panelists. The debate and discussions on climate adaptation generated thought provoking reflections even after the workshop. Further, the workshop identified concrete actions the Bank can implement to deepen the understanding and operationalize steps on how to maximize environmental benefits and climate proofing of transport projects.

The positive responses from the participants showed that:

- 92% of participants were either completely or almost completely satisfied with the content covered in the workshop
- 83% of participants either completely or almost completely thought the content of the workshop are relevant to their work
- 17% of the participants rated their overall satisfaction as *excellent*, 33% as *very good* and 42% as *good.*

Generally all sessions were well received and most of the participants highly agreed to recommend the program to others. Some suggested including more project case studies, in-depth technical discussion of tools and more time for interactive discussions instead of presentations to further improve the follow up workshops in the future.

Following up on such requests, the CCE-AT, together with RSDD is preparing for further specific training workshops on tools such as TEEMP in the near future.

Appendix 1: Workshop Agenda

Maximizing Environmental Benefits and Climate Proofing Transport Projects

Training Workshop Organized by Transport - CoP Climate Change and Environment Advisory Team, Supported by Environment CoP and RSDD

Date: 14 – 15 October, 2013
Location: ADB Headquarters, Auditorium A

DAY 1 – Monday, 14 October

8.30 – 9.00 am **Registration**
9:00 – 9.20 am **Welcome and Introduction**
Robert Guild, Director, PATE, Co-chair of TCoP
Javed Hussain Mir, Director, SEER, Co-chair of Environment CoP

- Purpose of workshop
- Rationale behind the workshop agenda

PART 1: MAXIMIZING ENVIRONMENTAL BENEFITS

9.20 am – 9.45 am
Evolution of ADB's environment agenda and its implications for the transport sector
Vidhisha Samarsekara, Senior Climate Change Specialist, INRM

- How has ADB incorporated environmental concerns in its operations over time?
- What has been the role of the transport sector in this regard?
- Where do we go from here, and how can we go beyond safeguard compliance?

9.45 am – 10.00 am Tea Break

10.00 am – 11.00 am
Panel Discussion: How to maximize environmental and other benefits of transport projects

Moderator: Ko Sakamoto, Transport Economist, RSID

Panelists: Bruce Dunn, Senior Environment Specialist, RSES; Sonia Sandhu, Senior Environment Specialist, SEUW; Karma Yangzom, Environment Specialist, SATC; Robert Earley, CAI Asia

11.00 am – 11.30 am
Minimizing ecological impacts of transport projects
Bruce Dunn, Senior Environment Specialist, RSES

- Case studies, examples of going beyond compliance for transport projects with ecological impacts.
- Is anything extra (technical expertise, funds, institutional linkages etc.) required to implement the examples/case studies?

11.30 - 12.00 pm
Reducing Emissions and Pollution in Transport projects
Robert Earley, Clean Air Asia

- Case studies, examples of going beyond compliance for transport projects with pollution issues
- Is anything extra (technical expertise, funds, institutional linkages etc.) required to implement the examples/case studies?

12.00 pm– 1.00 pm Lunch Break

PART 2: CLIMATE CHANGE ADAPTATION

1.00 pm – 1.30 pm
An overview of the latest developments on Climate Change
Preety Bhandari, Principal Climate Change Specialist, RSDD and Ko Sakamoto, Transport Economist, RSID

- What are the latest developments, debates, agreements on climate change at the global level?
- What are the latest discussions, agreements on climate change between MDBs?

1.30 – 2.30 pm
Debate: Is adaptation more important than mitigation for transport?

Moderator: Sharad Saxena, Senior Transport Specialist, EATC

For the motion: Charles Rodgers, Senior Environment Specialist (Climate Adaptation)**,** Ma Antonia (Toni) Yulo Loyzaga, Executive Director of Manila Observatory, Kristina Katich, Urban Development Specialist, EARD

Against the motion: Lloyd Wright, Senior Transport Specialist, RSID, Michael Rattinger, Climate Change Specialist, RSDD-CC, Glynda Bathan, CAI Asia

2.30pm – 3.30pm
Panel discussion: Experiences and challenges in adaptation in the transport sector

Moderator: Vidhisha Samarsekara, Senior Climate Change Specialist, INRM

Panelists:
1. AKM Mahfuzuddin Ahmed, Principal Climate Change Specialist, SAOD
2. Rustam Ishenaliev, Transport Specialist, SETC

3. Le Thi Thanh Huyen, National Environment Consultant, VRM

- Experience on “adaptation” in a transport project in the course of your work?
- Is it anything additional to what we are doing anyway?
- Given the uncertainty of future climate is it worth all the trouble?
- Key lessons, challenges and areas for improvement.

3.30pm – 3.45pm Tea Break

PART 3: WHAT NEXT? TRANSLATING RECOMMENDATIONS INTO ACTIONS

3.45pm – 4.00pm
Presentation of key recommendations from Part 1 and Part 2
Karma Yangzom, Environment Specialist, SATC

4.00 – 5.00pm
Reactions and Next steps
Sri. Widowati, Director, SATC, Xiaohong Yang, Director, CWTC, Robert Guild, Director, PATE, Gil Hong Kim, Director RSID

5.00 pm ONWARDS: RECEPTION AT COURTYARD

DAY 2 – Tuesday, 15 October

9:00am - 10:30am

Attend MFI GHG Subgroup meeting on Harmonizing GHG Emissions, Auditorium C

Transport Methodologies – Key Challenges and Way forward

(Presentations by 3 IFI's: ADB, AFD and EIB)

(PARTICIPATION IN THIS SESSION IS OPTIONAL)

10.30 – 10.45am Coffee Break

BACK TO AUDITORIUM A

10.45am – 12.00pm
Knowledge sharing presentation on training on "Climate Change and Development", University of East Anglia, Norwich, U.K
Karma Yangzom, Environment Specialist, SATC

Moderator: Sri Widowati, Director, SATC

12.00 – 1.30 pm Lunch Break

1:30pm – 3.30pm Discussion on next steps, responsibilities and timeline for finalizing the publication on Climate Vulnerability Assessment

AKM Mahfuzuddin Ahmed, Principal Climate Change Specialist, SAOD, Sharad Saxena, Senior Transport Specialist EATC; Narendra Singru, Senior Transport Specialist, CWTC; Le Thi Thanh Huyen, National Environment Consultant, VRM; Rustam Ishenaliev, Transport Specialist SETC; Karma Yangzom, Environment Specialist SATC

(THIS SESSION IS INTENDED FOR PARTICIPATION BY PEOPLE CONTRIBUTING TO THE PUBLICATION ON CLIMATE VULNERABILITY ASSESSMENT. HOWEVER, ANYONE ELSE INTERESTED TO LISTEN OR CONTRIBUTE IS MOST WELCOME TO ATTEND)

3.30pm – 3.45pm Tea Break

END OF WORKSHOP

Appendix 2: List of Participants

ADB Staff

DEPARTMENT/ DIVISION	NAME
CWRD	Shakeel Khan
	Narendra Singru
	Reddy Bathula
CWRD, URM (via VideoCon)	Feruza Insavalieva
EARD	David Fay
	Genevieve O'Farrell
	Kristina Katich
	Maria Cecilia Pana
	Sharad Saxena
PARD	Robert Guild
	Hanna Uusimaa
	Jennifer Baui
	Roberta Gerpacio
PARD, SOTL	Richard Phelps
PSOD	Frazier Gomez
RSDD	Gil-Hong Kim
	Apple Yuson
	Bruce Dunn
	Charles Rodgers
	Esmyra Javier
	Jane Romero
	Janet Arlene Amponin
	Jin Su Mun

	Ko Sakamoto
	Kristine Lucero
DEPARTMENT/ DIVISION	**NAME**
RSDD	Lloyd Wright
	Mark Kunzer
	Michael Rattinger
	Preety Bhandari
	Ryuzo Sugimoto
	Seetharam Kallidaikurichi
	Xiaoyu Liu
SARD	Sri Widowati
	Akm Mahfuzuddin Ahmed
	Dong Kyu Lee
	Karma Yangzom
	Merdinia Dequilla
	Maria Celina Cruz
	Ma. Consuelo Garcia
	Marie Kristine Estrella
	Ma. Theresa Prado
	Sharon Zhao
	Tsuneyuki Sakai
SARD, INRM	Naresh Pradhan
	Vidhisha Samarasekara
SERD	Javed Hussain Mir
	Reinard Teipelke
	Rustam Ishenaliev
	Sonia Sandhu
SERD, VRM	Robert Valkovic
	Le Thi Thanh Huyen

External Participants

NAME	POSITION	AFFILIATION
Glynda Bathan	Acting Executive Director	Clean Air Asia
Robert Earley	Transport Program Manager	Clean Air Asia
Ritchie Anne Rono	Program Officer	Clean Air Asia
Antonia Yulo Loyzaga	Executive Director	Manila Observatory