United Nations Environment Programme

Low Carbon Transport in India

CASE STUDY

contributing to Terminal Evaluation of

"Project 12/3-P1 – Support for Integrated Analysis and Development of Framework Policies for Greenhouse Gas Mitigation"

And

"Project 12/3-P2 – Support for the Deployment of Renewable Energy and Energy-efficient Technologies in Developing Countries"

arepo consult

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List of acronyms & abbreviations

COP	Conference of the Parties
CP	Consortium Partner
DTU	Technical University of Denmark
GHG(s)	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
ICLEI	Local Governments for Sustainability
INDC	Intended Nationally Determined Contribution
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KM	Knowledge Management
KMS	Knowledge Management System
LCT	Low Carbon Transport in India project
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
NDE	National Designated Entity
NGO	Non-governmental Organization
TA	Technical Assistance
ToC	Theory of Change
UNEP	United Nations Environment Programme
UNFCC	United Nations Framework Convention on Climate Change

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Oliver Lah is a project coordinator at the Wuppertal Institute and focuses on climate change mitigation policy analysis and sustainable urban mobility. Oliver currently coordinates several projects, such as SOLUTIONS on urban mobility around the world (http://www.urban-mobility-solutions.eu/), and SUSTAIN EU-ASEAN, which facilitates collaboration on climate and resource issues between Europe and Southeast Asia (http://www.sustain-eu-asean.eu/). Oliver is actively involved in several other projects, including TIDE, EVIDENCE, FLOW and EMPOWER. Oliver worked with international organisations, such as the OECD/ITF, UN-Habitat and GIZ on urban mobility issues. He is a Lead Author for the Fifth IPCC Assessment Report, Member of the Habitat III Policy Unit Urban Services and Technology and one of the Directors of the Partnership on Sustainable, Low Carbon Transport (SLoCaT). Prior to that Oliver worked for the New Zealand government, the University of Munich and the Minister of State to the German Federal Chancellor. He holds a Bachelor of Arts with Honours in Political Science, and a Master of Environmental Studies from Victoria University of Wellington.

Table 1: Project Identification Table for Promoting Low Carbon Transport in India – Sub-project summary[1]

UNEP PIMS ID (umbrella):	619	**IMIS number:**	3874
Sub-programme:	Climate Change	**Expected Accomplishment(s):**	EA(b)
UNEP approval date (umbrella):	10 June 2010	**PoW Output(s):**	2010/11 : 125, 126, 131, 134, 135 2012/13 : 121, 122, 123 2014/15 : 123, 126
Expected Start Date:	01 August 2010	**Actual start date:**	20 September 2010
Planned completion date:	01 August 2013	**Actual completion date:**	31 December 2015
Planned project budget at approval:	EUR 2.475.857,11	**Total expenditures reported as of [date]:**	1,490,644 EUR (2,242,222.01 USD)
Planned Environment Fund (EF) allocation:	USD 80,933	**Actual EF expenditures reported as of [date]:**	USD 80,933
Planned Extra-budgetary financing (XBF):	N/A	**Actual XBF expenditures reported as of [date]:**	N/A
XBF secured:	N/A	**Leveraged financing:**	N/A
Donors:			
BMUB	29 July 2010	**Amount:**	EUR 1.99 million (US$ 2.58 million)
Date of last Steering Committee meeting:		**Date of next Steering Committee meeting:**	
Mid-term review/ evaluation (actual date):	Interim report (30.05.2012)	**Other reviews/evaluations (actual date):**	Additional interim report (16.05.2013)

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[1] All data in this table needs confirmation by the project team.

EXECUTIVE SUMMARY

1.   The project Promoting Low Carbon Transport in India (LCT India) is undertaken by the United Nations Environment Programme (UNEP) as part of the broader evaluation and of the umbrella project 12/3-P2 – 'Support for the Deployment of Renewable Energy and Energy-efficient Technologies in Developing Countries'. The project was launched in 2010 to generate a link between local and national efforts to mitigate climate change, improve livelihoods and foster sustainable transport in India. This is being achieved by the project through capacity building at local and national levels through the development of local and national low carbon transport plans and guidelines. The project aims to contribute to the climate change mitigation targets of India focusing on local and national level interventions in the transport sector by influencing national policies for sustainable transport and by building capacity in cities.

2.   A core element of the project is the development of a methodology for preparing Low Carbon Comprehensive Mobility Plans (LCMPs) and applying this methodology for a selected number of mid-sized cities (between 250,000 and 2,500,000 inhabitants). The three cities selected for the project are Udaipur, Rajkot and Visakhapatnam. Based on substantive analysis and data gathering, scenarios were developed that formed the basis for LCMPs in three cities and recommendations for the national level. This aimed to assist the local and national partners in achieving both climate and development goals. Taking an integrated approach, the plans and guidelines developed for the project do not focus exclusively on climate change mitigation measures, but aim to address multiple policy objectives such as access, congestion, efficiency, air quality, equity and safety.

3.   Several of the recommended measures have been integrated in project proposals for the Smart Cities Mission of the Government of India, which is an initiative launched in 2015, aiming to develop 100 cities in India into citizen friendly and sustainable urban areas and investing about ₹980 billion (about US$14.4) billion (http://smartcities.gov.in). Initially the project recommendations were planned to feed into proposals for the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), which was a city-modernisation scheme of the previous administration, launched in 2005 with a total investment of over $20 billion. The JNNURM was replaced by the Smart Cities Mission and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) in 2015. The timing of the JNNURM and the LCT project was not in line, so the recommendations for project proposals could not be integrated in the JNNURM proposals. The cities however qualify for the Smart Cities Mission proposals, and two of the pilot cities (Udaipur and Rajkot) have been selected to be part of the Smart Cities Initiative.

Summarizing outcomes

4.   According to the Project Proposal to the International Climate Initiative of the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) of Germany, the objective of the LCT India project was '*to create an enabling environment for building sustainable transport systems which help in reducing the climate risks through mitigation within the transport sector and by building adaptation capacity'*.

5.   India as a case study region provides great opportunities to engage as a project in the transition to a low-carbon development pathway. India is now the third largest Greenhouse Gas (GHG) emitter in the world after China and the US and continues to be on an emission growth track. Although, emissions per capita are still lower than the global average. However, the pace and scale of the urban and economic development in India creates massive challenges, but also great opportunities, which makes India a very relevant country for UNEP´s work in the area of climate

change, energy efficiency and transport as travel demand is surging and so are the associated GHG emissions.

6.   A policy-advice oriented project such as LCT India can make a useful contribution. However, the policy and political environment can be challenging in India, in particular with regard to the fragmented responsibility between the local, state and union level and also within each level. The Government of India is aware of the challenges related to the nexus between economic development, which is vital for poverty alleviation and the related increasing transport demand that has massive local and global environmental impacts. In response to these challenges the Government of India launched a number of programmes, of which the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and the Smart Cities Mission are the most relevant in the context of this project.

Lessons Learned

7.   A focus on stakeholder relationships, coalitions and political support is important and the project has made good progress on that on the national level with a substantive involvement of the Institute of Urban Transport. The project has done a good job in creating a data basis on which policy recommendations and infrastructure decisions can be based and has developed guidance documents to replicate these activities in other cities in India (e.g. Low Carbon City: A Guidebook for City Planners and Practitioners). While providing a solid foundation on the basics of sustainable low-carbon transport and corresponding data, the papers may be too academic for many decision makers, which corresponds to the fact that very few local interview partners were aware of specific recommendations from project guidelines and studies.

8.   The process of developing the LCMPs, however, was considered to be highly valuable for local awareness for sustainable low carbon transport issues and national visibility as part of an international project. Vital for the generation of outcomes (i.e. policies that can have an actual impact) is the cooperation with all three relevant levels of government (municipal, state and union level). For this to succeed the facilitation of the process by organisations such as UNEP can be very helpful, which was highlighted by several local partners and stakeholders.

Recommendations

9.   Considering the fact that the project ended in December 2015 there may be little scope to implement recommendations within the framework of the LCT project, but there may be follow-up activities that can take-up the recommendations. There will be some level of continuity provided by continued promotion of the LCT project's outputs by UNEP and its project partners in the related activities. This may include incorporating recommendations on biofuels, electric vehicles and fuel efficiency into on-going activities of the Global Fuel Economy Initiative. Similarly, regional outreach activities of the Share the Road project that have started at the Urban Mobility India conference could incorporate and further support advice and capacity building on non-motorised transport issues at the local level in India.

10.   An update of the LCMP fact sheets, focusing on the concrete link between project recommendations and opportunities for implementation, for example through all the Smart Cities Mission would be highly desirable. This would be highly valuable to show the contribution of the project to concrete policy and investment decisions, which would help lifting the profile of the project in particular in the relationship with the Government of India and the funding agency.

11.   A short and succinct summary report of the policy processes and the challenges and opportunities for a low carbon transport policy in the Indian institutional and political context would create an excellent added value to the project's technical documents.

12.   In addition to specific technical advice, the provision of advice by UNEP to policy makers in India on stakeholder engagement, political coalitions and funding opportunities would be vital to bridge the gap between technical potential and actual implementation.

13.   Cooperation between UNEP and city networks and national entities would be useful to replicate the LCT approach to other cities in India and other countries in Asia and beyond. Linkages could be sought to initiatives.

14.   To boost the impact and to assist in the implementation of the recommendations from the various outputs the facilitation by UNEP of a dialogue between decision makers and national, multilateral and international funding institutions, such as the Asian Development Bank, the GEF, national development banks and providers or technical assistance.

1   INTRODUCTION

1.1   Background

15.   This evaluation report contains a summary of the project's context and development, background to the evaluation, details on project financing, outputs and outcomes of the project, an assessment of the project´s design and the reconstructed Theory of Change. A list of data/documents consulted and people interviewed in the preparation is given in the Annex.

16.   The project LCT India is undertaken by the UNEP as part of the umbrella project 12/3-P2 – Support for the Deployment of Renewable Energy and Energy-efficient Technologies in Developing Countries. The project was launched in 2010 to generate a link between local and national efforts to mitigate climate change, improve livelihoods and foster sustainable transport in India. This is being achieved by the project through capacity building at local and national levels through the development of local and national low carbon transport plans and guidelines. The project aims to contribute to the climate change mitigation targets of India focusing on local and national level interventions in the transport sector by influencing national policies for sustainable transport and by building capacity in cities.

17.   A core element of the project is the development of a methodology for preparing Low Carbon Comprehensive Mobility Plans (LCMPs) and applying this methodology for a selected number of mid-sized cities (between 250,000 and 2,500,000 inhabitants). The three cities selected for the project are Udaipur, Rajkot and Visakhapatnam. Based on substantive analysis and data gathering, scenarios were developed that formed the basis for LCMPs in three cities and recommendations for the national level. This aimed to assist the local and national partners in achieving both climate and development goals. Taking an integrated approach, the plans and guidelines developed for the project do not focus exclusively on climate change mitigation measures, but aim to address multiple policy objectives such as access, congestion, efficiency, air quality, equity and safety. Several of the recommended measures have been integrated in project proposals for the Smart Cities Mission of the Government of India, which is an initiative launched in 2015, aiming to develop 100 cities in India into citizen friendly and sustainable urban areas and investing about ₹980 billion (about US$14.4) billion (http://smartcities.gov.in). Initially the project recommendations were planned to feed into proposals for the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), which was a city-

modernisation scheme of the previous administration, launched in 2005 with a total investment of over $20 billion. The JNNURM was replaced by the Smart Cities Mission and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) in 2015. The timing of the JNNURM and the LCT project was not in line, so the recommendations for proposals could not be integrated in the JNNURM proposals. The cities however qualify for the Smart Cities Mission proposals, and two of the pilot cities (Udaipur and Rajkot) have been selected to be part of the Smart Cities Initiative.

18.   This case study of the project "Promoting Low Carbon Transport in India" is undertaken by the UNEP Evaluation Office as part of the broader Terminal Evaluation (TE) of the umbrella projects "12/3-P1 – Support for Integrated Analysis and Development of Framework Policies for Greenhouse Gas Mitigation" and "12/3-P2 – Support for the Deployment of Renewable Energy and Energy-efficient Technologies in Developing Countries". The aim of the case study is to assess the performance of the LCT India project to: (i) provide evidence of results to meet accountability requirements, and (ii) promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and its partners. To meet donor requirements, special effort has been put in this case study so that it would meet the same quality standards as a stand-alone terminal evaluation of the project.

2   THE PROJECT

2.1   Project context

19.   The project was launched in 2010 by UNEP and was designed to "forge a strong link between India´s national climate change policy and efforts to develop and improve transport systems in cities". Promoting low carbon transport in India seeks to promote institutional capacities in urban areas to improve mobility for the urban population, as well as decreasing CO_2 emissions and developing "smart cities".

20. CO_2 emissions from the transport sector increased from 9.5% of total fuel combustion in 2005 to 11.2% in 2012. The transport emissions in India mainly comprises of rail and road with shipping and air playing a minor part. Railways, which are a cleaner mode of travel, has lost share in freight as well as passenger transport over the years to the road sector; the contribution of railways in money terms within transport had fallen from 26.5% in 1990 to 18.6% in 2007. Modal shares in India for passenger transport are 87.4% road and 12.6% rail, whereas for freight it is 61.3% road and 38.7% rail. The growth in the road sector has been accompanied by an unsustainable growth in vehicle ownership and CO_2 emissions. The increase in the number of vehicles has led to increased congestion, local air pollution, road accidents and CO_2 emissions, and the problem is most severe in cities with dense populations and space constraints.

21.   India as a case study region provides great opportunities to engage as a project in the transition to a low-carbon development pathway. India is now the third largest Greenhouse Gas (GHG) emitter in the world after China and the US and continues to be on an emission growth track. Although, emissions per capita are still lower than the global average. However, the pace and scale of the urban and economic development in India creates massive challenges, but also great opportunities, which makes India a very relevant country for UNEP´s work in the area of climate change, energy efficiency and transport as travel demand is surging and so are the associated GHG emissions.

22.   A policy-advice oriented project such as LCT India can make a useful contribution. However, the policy and political environment can be challenging in India, in particular with regard to the

fragmented responsibility between the local, state and union level and also within each level. The Government of India is aware of the challenges related to the nexus between economic development, which is vital for poverty alleviation and the related increasing transport demand that has massive local and global environmental impacts. In response to these challenges the Government of India launched a number of programmes, of which the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and the Smart Cities Mission are the most relevant in the context of this project.

23. At the time of project design, several transport-related initiatives had been announced by different ministries to improve motorways, freight by rail transport, urban transport systems and transport fuel quality and efficiency. However, these responses were considered inadequate from a climate perspective because of coordination problems between ministries, a limited increase in public transport options compared to demand, and overall, a lack of a paradigm shift and the long term vision required to create a sustainable transport system. A large amount of transport infrastructure building activities were underway, but there was little effort to climate proof these for the imminent climate risks. The Indian transport sector was therefore on an unsustainable path. It could contribute in a major way towards increasing the climate risks (by contributing to GHG emissions) and was, at the same time, not geared to face these challenges.

24. India's National Action Plan on Climate Change (2009) recognized that a large amount of GHG emissions could be mitigated from transport through: i) increased use of public transport, ii) enhanced supply of rail infrastructure, iii) higher penetration of biofuels, and iv) improved energy efficiency of all kinds of transport vehicles.

25. The LCT India project, a collaboration between UNEP, the Government of India and the International Climate Initiative of Germany, was launched in November 2010. The project aimed at creating an enabling environment for coordinating policies at national level to achieve a sustainable transport system and building the capacities of cities in improving mobility with lower CO2 emissions, which would be achieved through Transport Action Plans at National level and Low Carbon Mobility Plans at the city level.

26. This sub-project is part of umbrella project 12/3-P2 of the UNEP 2010-11 Programme of Work. The umbrella project 12/3-P2 was expected to help create the right enabling environment in developing countries (through removal of market development barriers, improved access to information, adequate government policies, improved regulations and procurement programmes, sufficient and well implemented technology codes and standards, stable investment environment, coherent energy policies, adequate financial instruments etc.), so that financing could flow more easily toward climate friendly technologies. Project 12/3-P2, which was composed of seven sub-projects, was closed at the end of the 2010-2011 biennium and its ongoing activities were absorbed by Project 12/3-P1, which was extended until 31 December 2014. Taken together, the two umbrella projects included 21 sub-projects executed by different entities and funded from various sources (including the GEF). Project 12/3-P1 was initially designed to: help developing countries analyse GHG emission reduction opportunities made possible by new technologies in a context that was relevant for each country; support the choice of appropriate policy mixes; integrate GHG mitigation considerations into sectorial policies and plans, and to promote early planning and action. Its scope was expanded when sub-projects under the umbrella 12/3-P2 were integrated into it.

2.2   Sub-project objectives and components

27. According to the Project Proposal to the International Climate Initiative of the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) of

Germany, the objective of the sub-project LCT India was '*to create an enabling environment for building sustainable transport systems which help in reducing the climate risks through mitigation within the transport sector and by building adaptation capacity'.*

28.   The project aimed to achieve this objective by achieving the following primary goals:

29.   **Goal 1: Creating an enabling environment for coordinating policies at national level to achieve a sustainable transport system.** The project would assess the policies and actions that align climate policies and transport investments by developing "Transport Action Plans" in cooperation with multiple stakeholders including industry associations, financial agencies, and different Ministries of Government of India. The Transport Action Plan would include:

- Indicators for measuring sustainability of the transport sector in India;
- Integrated assessment at the national level of all the competing transportation technologies, using an energy system model; Policy analysis for reducing emissions through modal switching, fuel substitutions and fuel efficiency improvements; Framework for climate proofing of transport infrastructures and application to a transport infrastructure. This includes assessments on the risks and vulnerability of transport infrastructure to climate changes and its cost implications on infrastructure investments and technological requirements; Case studies of a few transport projects to assess impacts on climate from mitigation measures (e.g., modal switch, fuel substitutions and fuel efficiency improvements, etc.) and impacts of climate change on transport infrastructures; and Policy recommendations and a Road Map for a sustainable transport system.

30.   **Goal 2: Building capacity of cities in improving mobility with lower CO2 emissions.** The project envisaged helping cities to create a vision for sustainable transport at the city level and help them in implementing this vision. The vision for the cities would be laid out in the "Low Carbon Comprehensive Mobility Plans (LCMPs)". The LCMPs would be developed using project funds and in-kind contribution from cities. The LCMPs would provide a road map – with elaboration of investments requirements, infrastructure choices, etc. for achieving sustainable transport in the cities. Capacity building would be provided to targeted cities for the development of viable project proposals covering technology and financial packages for the implementation of the action plans. The project team would also identify and recommend potential mechansims for financing the sustainable infrastructures as identified in the mobility plans. This would include submission to the Ministry of Urban Development for getting funds for proposed projects under JNNURM allocation.

31.   Other project goals were to achieve:

- Improved local environment by reducing emissions of local air pollutants; Improved mobility for all people by improving access to public transport and creating infrastructures for non-motorized transport; and Improved Energy Security for India as well as other countries by reducing the demand for fossil fuels.

32.   In a broader sense, the sub-project was also expected to contribute to the objectives of the umbrella projects it belonged to. The objective of **project 11/2-P2** was '*to promote the deployment of cleaner energy technologies in specific sectors, with an emphasis on more-energy efficient and renewable energy technologies'.* The sub-project was expected to contribute more specifically to the umbrella project output: *Best practices reviewed and policy approaches designed and tested to integrate sustainable mobility considerations into urban management and land use plans*".

33.   As mentioned, at the end of 2011, the project 11/2-P2 was closed and all its sub-projects were moved under umbrella project **12/3-P1**. The objective of that umbrella project was *to strengthen the capacity of countries to analyse, plan and implement emission mitigation opportunities*. Both umbrella projects had the same project outcome, corresponding to EA(b) of the Climate Change Sub-Programme for the UNEP Programme of Work (PoW) 2010-2011: *Countries make sound policy, technology, and investment choices that lead to a reduction in greenhouse gas emissions and potential co-benefits, with a focus on clean and renewable energy sources, energy efficiency and energy conservation.* This EA was reformulated for the PoW 2012-2013 as follows: *Low carbon and clean energy sources and technology alternatives are increasingly adopted, inefficient technologies are phased out and economic growth, pollution and greenhouse gas emissions are decoupled by countries based on technical and economic assessments, cooperation, policy advice, legislative support and catalytic financing mechanisms.*

2.3   Target geography, target groups

34.   The project focuses on creating an enabling environment for climate change policies in the urban transport sector in India. No specific explanation for the city selection is provided in the Project Document. However, a general description is provided of the dynamic urban development in India, the second-largest emerging economy in the world. Addressing low carbon transport in India focuses primarily on managing the growth of emissions in the sector and building on the strengths of the modal efficiency that the country already (or still) has.

Figure 1: General Map of the LCT India project and its pilot cities

35.   The target groups identified in the Project Document are local and national policy makers, transport and technology providers and funding institutions, but also transport users. The project planned to reach those target groups by reports and workshops to disseminate project information.

2.4   Objectives and components

36.   The project aims to contribute to the climate change mitigation targets of India focusing on local and national level interventions in the transport sector. To deliver on this, the project has the overriding goal of *creating an enabling environment for a sustainable transport system, which will help in reducing the climate risks through mitigation within the transport sector and by building adaptation capacity*. To deliver on there are two objectives stated in the Project Document:

   a) Create an enabling environment for coordinating policies at the national level to achieve a sustainable transport system

   b) Build capacity of cities in improving mobility with lower CO2 emissions

37.   These actions are intended to deliver long-term impact, in particular emission reductions, transport quality improvements, improved mobility for all by better public transport and non-motorised transport infrastructure and improved energy security for India. The two stated objectives consider the following elements that form the work programme for the project:

   a. **Transport Action Plan at the national level**

      i. The Transport Action Plan was supposed to deliver on the first objective and help create an enabling environment among relevant authorities to coordinate policies at the national level to implement sustainable transport infrastructures and policies. This includes urban passenger transport, but also long-distance passenger and freight transport.

      ii. The national level project component combines analytical work and stakeholder consultations to deliver specific, thematically-focused policy advice documents such as:

         - Transport Scenarios for India: Harmonising Development and Climate Benefits
         - Preparing a Comprehensive Mobility Plan (CMP) - A Toolkit
         - Assessment of Motor Vehicle Use Characteristics in Three Indian Cities
         - Second-Generation Biofuel Potential in India: Sustainability and Cost Considerations
         - A Guidebook on Low Carbon City Planning in India
         - Impact Assessment and Management Framework for Infrastructure Assets: A Case of Konkan Railways
         - NMT Investments in India: Policy, Investments and Design,
         - Bus Rapid Transit (BRT) Case Studies in India - Low-Carbon Mobility in India and the Challenges of Social Inclusion

   b. **Low Carbon Comprehensive Mobility Plans and Project Proposals at the city level**

      i. Activities at the city level focused primarily on the development of Low Carbon Comprehensive Mobility Plans (LCMPs) and local capacity building.

ii. To support the LCMP development stakeholder dialogues were facilitated and recommendations developed that can then be integrated into relevant national programmes, such as the JNNURM.

2.5 Implementation arrangements and planned milestones/key dates in project design and implementation

38. The consortium consists of domestic and international institutions and is comprised of the UNEP Transport Unit in the Division of Technology, Industry and Economics (DTIE), the UNEP Technical University of Denmark (DTU) Partnership (former UNEP Risoe Centre) and prominent local partners such as the Indian Institute of Management, Ahmedabad (IIMA), the Indian Institute of Technology, Delhi (IITD) and Centre for Environmental Planning and Technology (CEPT) University. This team works in coordination with the Ministry of Environment and Forests, the Ministry of Urban Development (and corresponding Departments at state level) and prominent experts and project advisors. The project institutional structure is illustrated in Figure 1 below.
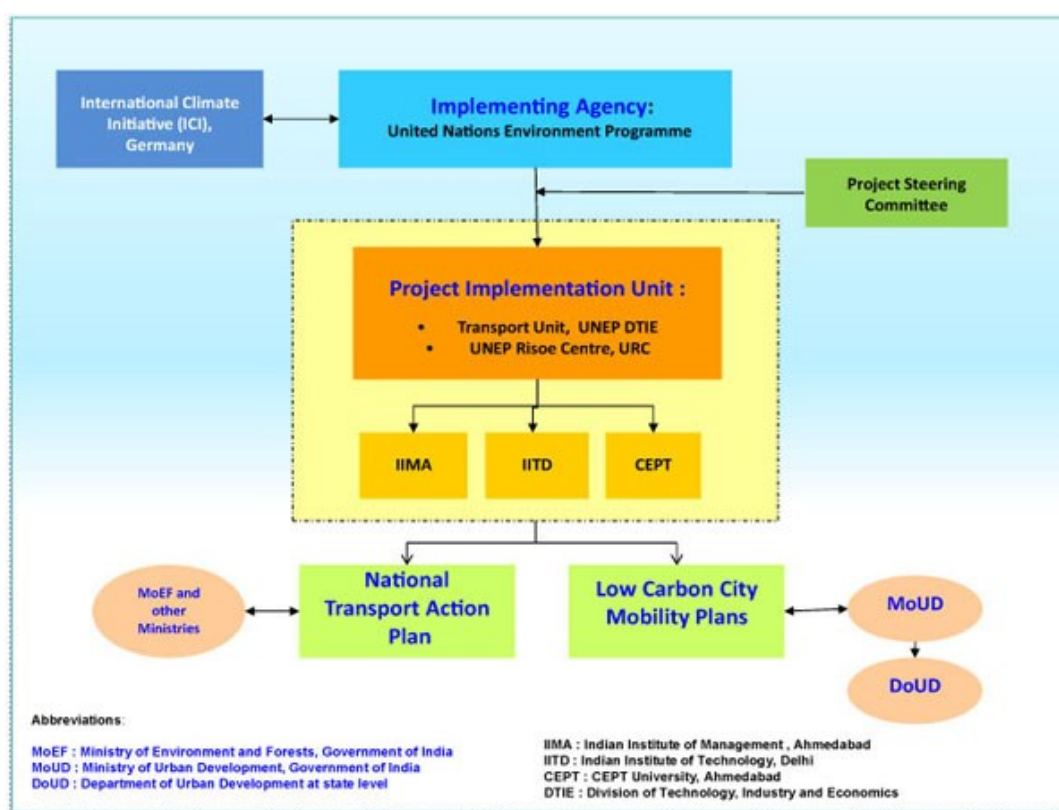
Figure 1: Project Institutional Structure (as proposed)

39. The UNEP Transport Unit has overall responsibility of the project including planning and ensuring timely project deliverables. UNEP is also part of the project Advisory Board together with other relevant stakeholders and provides project supervision and project management together with the UNEP DTU Partnership. This includes coordination, implementation, follow-up, administration and dissemination of the results to wider audiences. UNEP is also responsible for project progress monitoring and regular reporting within UNEP and to the main donor (Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit, BMUB). The UNEP DTU Partnership supports UNEP in project management and monitoring with local partners in country, and with methodology development. IIMA has the lead on preparation of Transportation Action Plans at national level, IITD

leads on the initiatives at the city level and CEPT University is responsible for bringing in dimensions of inclusiveness and sustainability in urban transport planning.

40.   The project did not work with the Departments of Urban Development at the state-level as initially proposed (Figure 1).

41.   The project was designed around 11 Work Packages to deliver on the project objectives. The table below provides an overview of the Work Packages, partners involved and estimated timing and effort. The LCT India project is funded by the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) through the International Climate Initiative (ICI). It is implemented by UNEP and its partners, the UNEP DTU Partnership, the Transportation Research and Injury Prevention Programme (TRIPP of IITD, the IIMA, the Centre for Urban Equity (CUE), of CEPT University and local consultants.

Table 2 Project work plan and timing

Work-package No	Work package title	Lead organisation short name	Collaborating organisation	Person-month	Start month	End month
1	Project management and coordination	UNEP/UNEP-DTU	IIMA, IITD, CEPT	29.5	0	36
2	Development of sustainability indicators	UNEP-DTU	CEPT, IIMA, IITD	21	2	15
3	Integrated assessment at national level	IIMA	UNEP-DTU	26	3	24
4	Case studies	UNEP-DTU	IIMA, IITD, CEPT	31	2	20
5	Framework for climate proofing	IIMA	UNEP-DTU	6	2	12
6	Fuel efficiency study	IIMA	IITD	16	13	20
7	Methodology for Low Carbon Mobility (LCM) for cities	IITD	IIMA, CEPT	21	2	9
8	Low Carbon Mobility (LCM) plans for cities	IITD	IIMA/CEPT	40	9	24
9	Development of project proposals	IITD	CEPT	13	24	36
10	Project findings & policy recommendations	UNEP/ UNEP-DTU	IIMA, IITD, CEPT	3.3	33	36
11	Dissemination and information exchange	UNEP	UNEP-DTU, IITD, IIMA, CEPT	11.9	15	36
	TOTAL	-		218.7		

42.

2.6 Project partners and other key stakeholders

43. The two key stakeholders from the policy side for the project were Ministry of Environment, Forests and Climate Change (MoEF & CC) and Ministry of Urban Development (MoUD).

44. The project was endorsed by MoEF & CC and a high level of participation from MoEF & CC was maintained at all the capacity building workshops. All the publications from the project were also shared with MoEF & CC.

45. The INDC of India has a strong focus on transport sector and many of technologies identified as priority for low carbon transport in India within the project are also emphasised with the INDC. MoUD was the second major stakeholder of the project and a constant contact was maintained within the life time of the project. MoUD was full appraised of the LCMP preparation in the three cities.

2.7 Project design assessment

46. The overall project design focuses on the development of high quality outputs based on sound scientific data and methodology.

47. There was active stakeholder participation, in particular during the LCMP development. The project aimed to support India in delivering on the National Action Plan on Climate Change and appropriate stakeholders at the national level were identified and they participated in consultations that were undertaken as part of the workshops. The key stakeholders identified at national level included Ministry of Railways, Ministry of Urban Development, Bureau of Energy Efficiency, MoEF & CC, Delhi Metro Rail, National Capital Region Planning Board, Institute of Urban Transport, TERI, and many more. Municipal corporations were the main partners at the local level and to formalise the relation MoUs were signed between UDP and Municipal corporations. All the other key stakeholders e.g., Traffic Police, Urban Development Authorities, Elected representatives, representatives of rickshaw unions, etc. also had a substantive input into the LCMP development. The situational analysis focuses in depth on technical details, but gives little attention to societal and political aspects.

48. There is a strong focus on scenario development and analysis of them is the main focus of the project analysis and the scenario development.

49. Gender issues are reflected well in the LCMPs and specific deliverables address access and equity issues, e.g. a Energy Policy paper on Low carbon scenarios for transport in India: Co-benefits analysis and a planning guide on Gender Sensitive Transport Planning for Cities in India. A common methodology would have been useful to address gender issues, but also wider sustainable development issues.

50. The drivers and assumptions for the various scenarios are very well described. However, the barriers and opportunities of policy implementation as well as political and institutional structures that may affect both policy implementation as well as their effectiveness, and with that the impact on GHG emissions, is barely discussed in the project outputs. This would be a vital analysis to go beyond outputs towards policy outcomes at the local and national level, which is essential to achieve the desired impacts described earlier.

51.   The appropriate actors and most of the stakeholders are identified by the project, but their role from the initial discussion of potential policy and infrastructure interventions, to the implementation and delivery is not discussed appropriately in the project outputs.

52.   Different terminologies are used in the project documents (e.g. the term outcomes was used for the project outputs, such as the plans and the website generated by the project).

53.   All the key elements of the Theory of Change (ToC) feature somehow in the project documentation starting from the actual project outputs to the outcomes; the policy and infrastructure changes the project aims to trigger and the resulting CO_2 emissions reductions. However, there is no clear roadmap for how the project outputs can move along further in the ToC logic.

54.   The Project Document focuses primarily on the project outputs and their resources and timing. Similarly, the means of verifications are limited to the outputs.

55.   The limited number of milestones are sufficient to track progress towards the outputs. However, as the outcomes are not clearly defined (e.g. specific policies, such as a fuel tax or specific mass transit system) there is only a weak link between project outputs and outcomes.

56.   The project was able to mainstream the LCMP approach within the CMP toolkit and worked closely with the MoUD on this. At the city level recommendations were provided by the project.

57.   Data collection and baseline development is very well explained in the project documents. Both outputs and desired outcomes have been sufficiently specified in the project documents. There are no clear performance targets for the project, but there is a reasonable link between resource allocation and progress in output generation, less so with regard to outcomes.

58.   The knowledge management system relies on the project website that provides a database with all relevant project outputs. Beyond that some dissemination activities were planned at appropriate workshops. Five newsletters were produced during the project.

59.   The data collection focused almost exclusively on the scenario development. As the LCT India project was aiming to inform long-term policy change no immediate impacts were expected to occur during the project's lifetime. Hence, no monitoring and evaluation arrangements were made. No time for evaluation activities has been allocated. Stakeholders were only involved in the development of project outputs and not not in any monitoring activities.

60.   Social, environmental and economic co-benefits are well acknowledged in the Project Document and a dedicated paper on this was planned and delivered.

61.   With the large number of scenarios, all of which include a baseline, there is a substantive body of indicators, but the link to the suggested policies and infrastructures is weak and the link to the direct impacts of the project is largely missing.

2.8 Implementation and changes in design during implementation

62.   The project design stayed largely unchanged. During implementation the project applied for an extension as a result of several delays in the project. Beyond that the following changes were reported in the interim reports:

a. Specific project goal (output): Build capacity of two cities on low-carbon mobility options
   - Activities carried out: City level indicators developed and finalized through an expert stakeholder consultation and public participatory approach (10/2011)
   - Case studies on Bus Rapid Transit (BRT) and Metro – draft report completed

b. Deviation (interim report):
   - Some delay in getting the cities on board and finalizing the MoUs
   - 2 other cities will have later start and end dates

c. Deviation (final report):
   - Project had a delay of about 9 months in the development of the guide book and toolkits and preparing project proposals (technical and financial) for the implementation for action plans
   - The fourth city (Ludhiana) did not come on board for the development of the LCMP as there was not sufficient support for the finalisation of the Memorandum of Understanding with UNEP.
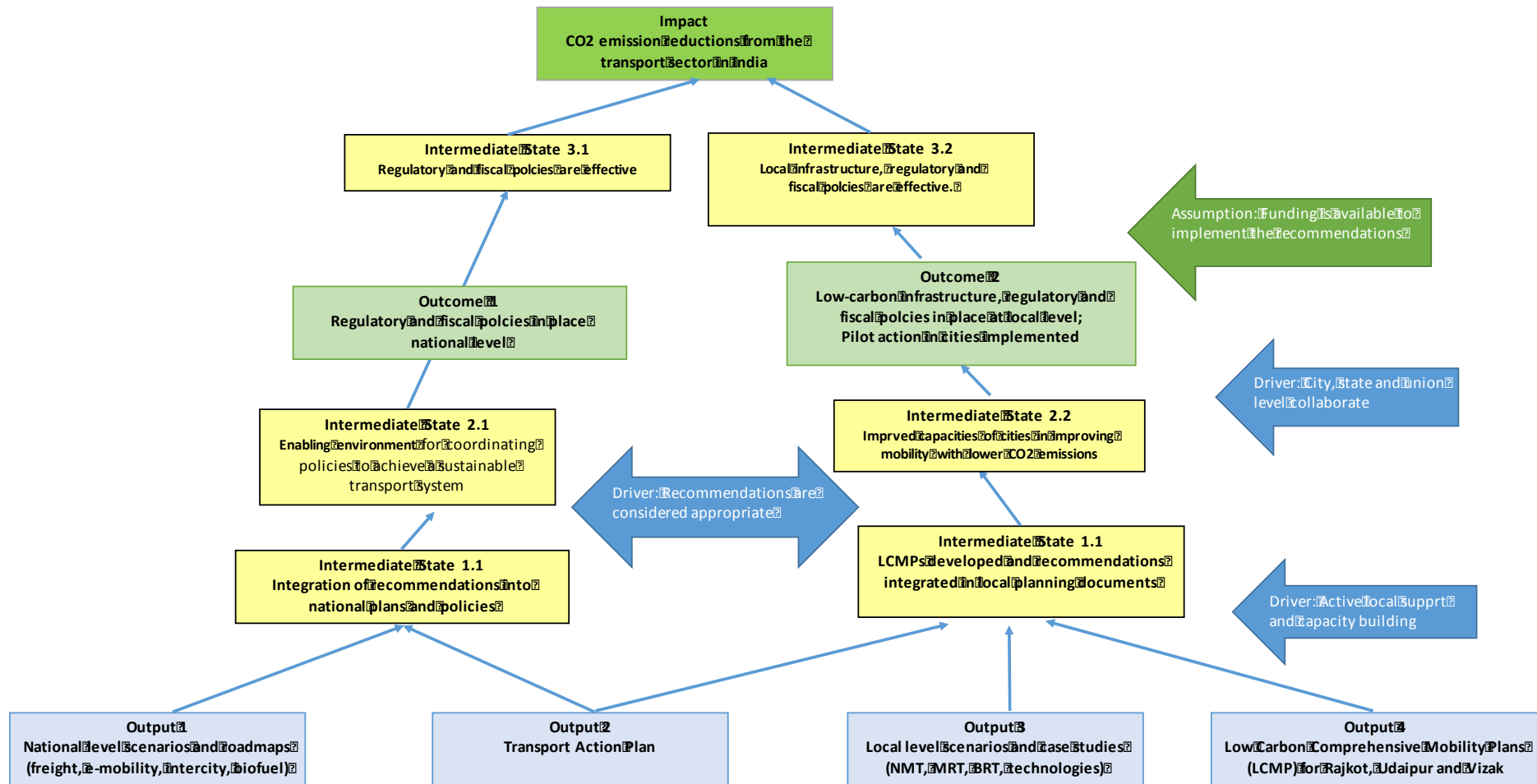
2.9 Project financing

Table 3 Project costs and expenditures

		Agreed Budget	%	Expenditure reported with previous interim reports	%	Expenditure accrue within the reporting year	%	Total expenditure accrue until the end of the reporting year	%	Remaining budget	Used budget by per cent
		Annex 3A		+ Column 6 of the previous interim report				+ Column 3 + Column 4		+ Column 2 - Column 6	+ Column 5 / Column 2 * 100
A)	Personnel Expenditure	652,940.00		563,838.18		52,195.81		616,033.99		36,906.01	94.35%
B)	Administrative Expenditure										
B1)	Items with an individual value of max. € 410	400.00		0.00		0.00		0.00		400.00	0.00%
B2)	Rents	0.00		0.00		0.00		0.00		0.00	-
B3)	External services	1,068,959.00		557,339.01		278,426.56		835,765.57		233,193.43	78.18%
B4)	Consumables	0.00		0.00		0.00		0.00		0.00	-
B5)	Literature/ Printing	140,000.00		20,291.99		4,349.05		24,641.04		115,358.96	17.60%
B6)	Other costs	312,050.00		91,952.96		0.00		91,952.96		220,097.04	29.47%
B7)	Travel	76,498.00		43,940.10		3,395.73		47,335.83		29,162.17	61.88%
	Total B)	1,597,907.00		713,524.06		286,171.34		999,695.40		598,211.60	62.56%
C)	Items and investments with an individual value over € 410	10,000.00		9,407.46		0.00		9,407.46		592.54	94.07%
D)	Total A) - C)	2,260,847.00		1,286,769.70		338,367.16		1,625,136.86		635,710.14	
E)	Administration fees	225,010.11		112,764.48		61,224.89		173,989.37		51,020.74	77.33%
F)	Total D) - E)	2,485,857.11		1,399,534.18		399,592.05		1,799,126.23		686,730.88	72.37%
G)	Financing of the total amounts in F)										
G1)	Own funds	530,000.00	21.32%	419,350.62	29.96%	54,652.37	13.68%	474,002.99	26.35%	55,997.01	89.43%
G2)	External funding/ revenue	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	-
G3)	Third party grants	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	-
G4)	Grant by BMU	1,955,857.11	78.68%	980,183.56	70.04%	344,939.67	86.32%	1,325,123.23	73.65%	630,733.88	67.75%

H)	Cash/ Disbursed grant by BMU		Previous reporting years	Current reporting year	Total
H1)	Cash at the beginning of the reporting year			975,673.54	
H2)	Grant disbursed by BMU		1,955,857.10	0.00	1,955,857.10
H3)	Cash at the end of the reporting year		975,673.54	630,733.87	630,733.87

2.10   Reconstructed Theory of Change

Figure 2 Theory of Change (TOC)

Impact
CO2 emission reductions from the transport sector in India

Intermediate State 3.1
Regulatory and fiscal polcies are effective

Intermediate State 3.2
Local infrastructure, regulatory and fiscal polcies are effective.

Assumption: Funding is available to implement the recommendations

Outcome 1
Regulatory and fiscal polcies in place national level

Outcome 2
Low-carbon infrastructure, regulatory and fiscal polcies in place at local level; Pilot action in cities implemented

Driver: City, state and union level collaborate

Intermediate State 2.1
Enabling environment for coordinating policies to achieve a sustainable transport system

Intermediate State 2.2
Imprved capacities of cities in improving mobility with lower CO2 emissions

Driver: Recommendations are considered appropriate

Intermediate State 1.1
Integration of recommendations into national plans and policies

Intermediate State 1.1
LCMPs developed and recommendations integrated in local planning documents

Driver: Active local supprt and capacity building

Output 1
National level scenarios and roadmaps (freight, e-mobility, intercity, biofuel)

Output 2
Transport Action Plan

Output 3
Local level scenarios and case studies (NMT, MRT, BRT, technologies)

Output 4
Low Carbon Comprehensive Mobility Plans (LCMP) for Rajkot, Udaipur and Vizak

3   THE EVALUATION

59.   The aim of this evaluation was to assess the performance of the LCT India project (in terms of relevance, effectiveness and efficiency), and determine its outcomes and likelihood of impact, including its sustainability, to contribute to the two primary purposes of the terminal evaluation of the umbrella projects: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and its partners.

60.   The case study of the LCT India initiative focused on the following sets of **key questions**:

a. How relevant was the sub-project to beneficiary needs and UNEP's mandate and Programmes of Work?

b. How coherent was the sub-project with the umbrella projects' objectives and proposed intervention strategies, and how complementary was it to other sub-projects and other UNEP projects in the same fields?

c. To what extent and how efficiently did the sub-project deliver its intended outputs?

d. How well did the sub-project contribute to its expected outcomes, and the expected outcomes of the umbrella project?

e. What were the internal and external factors that most affected performance of the sub-project?

f. What management measures were taken to make full use of opportunities and address obstacles to enhance sub-project performance?

3.1   Overall Approach and Methods

61.   The case study applied a participatory approach in which key stakeholders were kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods were used to determine sub-project achievements against the expected outputs, outcomes and impacts. This included close communication with the LCT India project team.

62.   The data collection for this case study included a desk review of all relevant project report and outputs website and budgets, interviews (list of individuals attached) and field visits to Delhi, Udaipur and Visakhapatnam.

4   FINDINGS

4.1   Strategic relevance

Strategic relevance for UNEP

63.   Considering the focus on climate change mitigation in the transport sector in India, the project appears to make a relevant contribution to the framework project 12/3-P2 as one of the primary objectives is the support of the deployment of energy-efficient transport technologies. The

project itself fits very well into the programmatic focus on climate change mitigation, which is a key component of the Climate Change Sub-Programme, one of the seven cross-cutting thematic priorities for UNEP. By supporting local authorities to develop transport sector climate change mitigation measures and enabling national level authorities to support cities in this, the project delivers on the overall sub-programme objective to "strengthen the ability of countries (…) to integrate climate change responses into national development processes".

64.   The project addressed sustainable transport from a wider sustainable development perspective also highlighting the wider benefits such as safety, access and air quality. This is vital to get political support from key stakeholders. The focus on climate change also includes aspects of climate change adaptation and resilience.

65.   The project outputs have a high level of scientific quality, which makes them a credible and useful as a basis for policy decisions. The recommendations provided in the outputs are helpful, but are sometimes a bit hidden in rather lengthy documents, which makes it challenging to reach the desired taget was not sufficiently designed for impact and many of the project outputs are geared towards the scientific community rather than policy makers and advisors. The strong focus on data gathering and analysis somewhat distracted from the objective to create socio-economic impacts within the lifetime of the project, much of which was considered to be taken up after the project finished. However, there are no mechanisms to ensure that the project findings, which are valuable, are actually brought into concrete investment and policy making processes. A Low-Carbon Mobility Plan itself is only a reference point and not a policy or decision-making tool itself.

66.   The LCT India project links to other UNEP transport projects, but is not part of the strategic programmes of UNEP's Transport Unit (DTIE), which include the Partnership for Clean Fuels and Vehicles (PCFV), the Global Fuel Economy Initiative (GFEI), the Share the Road project, Africa Sustainable Transport Forum (ASTF), The Global Clean Ports project and a new initiative on electric mobility (de Jong 2015). For follow-up activities it may be worth considering incorporating project findings and continue the dissemination through the UNEP Share the Road (local and national) and the Global Fuel Economy Initiative (national) programmes.

Addressing stakeholder needs and priorities

67.   The project itself was initiated by the German environment ministry (BMUB) and its International Climate Initiative (ICI). It was part of a strategic cooperation agreement between UNEP and the ICI. A stakeholder workshop was organized in 2009 in cooperation with the Ministry of Environment, India to ensure that the project delivered on the National Action Plan on Climate Change and to seek endorsement from the national government. In a later stage the Indian Ministry of Urban Development was involved to make the link between the local and national level and ensure visibility for key programs, such as the JNNURM and the Smart Cities Mission. Another strategic objective was supporting the government in the development of their transport contribution to the Intended Nationally Determined Contribution (INDC).

4.2   Achievement of outputs

68.   Most of the intended outputs were delivered, although some adjustments to the work programme were deemed necessary. The outputs included three LCMPs, several guidelines, roadmaps and journal articles.

LCMP development

69.   The LCMP methodology was developed by the project partners UNEP DTU Partnership together with IIT Delhi, IIM (Ahmedabad), and CEPT University (Ahmedabad) and was applied in the three pilot cities. Rajkot was supported by CEPT University (a consortium partner), Vishakhapatnam by the consultancy iTrans and Udaipur by the Urban Mass Transit Company (UMTC), both engaged through a sub-contract. The LCMPs aimed to focus on inclusive, low-carbon and sustainable urban transport, going beyond the Comprehensive Mobility Plans, which are basic statutory documents that had been developed by the cities previously. A substantive part of the resources went into these activities, which seems appropriate.

70.   The cities were selected based on size and geographic location to have a relatively even spread across the country. The cities also represent a type of cities (mid-sized: between 250,000 and 2.5m) that is facing rapidly increasing travel demand and emissions (GHG and local pollutants) in particular in the transport sector and its vast growth potential.

71.   For each of the LCMP developments a local knowledge partner was engaged to build on synergies with previous activities and link to existing relationships with local stakeholders.

Udaipur

72.   *Local partner:* The development of the LCMP for Udaipur was led by Urban Mass Transit Company Ltd.

73.   *Output:* Low-Carbon Comprehensive Mobility Plan: Udaipur Ranjan Jyoti Dutta, Rajat Bose, Shruti Mahajan, Durga Prasad Sunku, Yashwanth Namasani and Harshita M. Sarma, January 2015 http://www.unep.org/transport/lowcarbon/PDFs/LCMP_Udaipur.pdf

74.   *Summary.* This report highlights the importance of a sustainable integrated approach in Udaipur to face the challenges of population growth and urbanization in the future. Main recommendations are the expansion of the public transport system and the promotion of non-motorized transportation.

75.   *Evaluation comments:* The main stakeholders, in particular the municipal corporation officials, were very well aware of the project's activities in general terms. The Udaipur Transport Commissioner highlighted the fact that a number of recommendations from the LCT project are integrated in the Smart Cities proposal currently being developed. The objective of the Smart Cities Mission is to develop only parts of the city, not the city as a whole. For this the recommendations of the LCMP had to be adapted. For the Smart Cities proposal, the historic old town has been selected for development into a smarter district. While covering only 5% of the city's space, this part of town is home to 20% of its inhabitants. Hence, providing a good opportunity to implement some of the proposed measures in one part of the city hoping that this pilot action will be replicated. Measures being investigated for integration into the smart cities concept for Udaipur include electric rickshaws and bikes, fuel switch for taxis and buses, as well as a focus on non-motorized transport in the old city (http://udaipursmartcity.in).

76.   There is a coordination issue between local and state level authorities, in particular the municipal corporation and Urban Improvement Trust, which is a state level institution that also has substantive control over budget and the development of certain routes within the city. The LCT

project was able to make some contributions to the coordination between those main stakeholders, but focused primarily on the municipal corporation as representative of the city administration. The Regional Transport Officer highlighted some of the key issues from his perspective where the LCT project could make a useful contribution to solving local mobility issues. This included re-directions and restrictions on particular routes, management of the efficiency and pollution levels of the vehicle fleet, which included registration and regulations as well as pollution control and enforcement.

Rajkot

77.   *Local partner:* The development of the LCMP for Rajkot was led by CEPT University, which is also a consortium partner in the project.

78.   *Output:* Low–Carbon Comprehensive Mobility Plan: Rajkot by Talat Munshi, Kalgi Shah, Anusha Vaid, Vimal Sharma, Kenny Joy, Sayan Roy, Deepali Advani and Yogi Joseph, November 2014 http://www.unep.org/transport/lowcarbon/PDFs/LCMP_Rajkot.pdf

79.   *Summary:* The Low-Carbon Comprehensive Mobility Plan takes a closer look at a period of twenty years (2011-2031), including a short term plan and long term targets. Data has been collected on travel behaviour, identifying requirements for various scenarios.

80.   *Evaluation comments:* The Low-Carbon Comprehensive Mobility Plan for Rajkot was developed in cooperation with the Rajkot Municipal Corporation (RMC) and Rajkot Urban Development Authority (RUDA) and was finalised in 2014. Process, structure and content followed the same methodology as in the other pilot cities and obtained a reasonable involvement of key stakeholders. Although recent political change in the city and its administration made it more challenging to pursue recommendations from the LCMP, transport features well in the draft Smart City application, which is currently open for consultation. Transport was identified as one of the key priority areas, in which measures on Intelligent Transportation System (ITS) and non-motorised transport solutions feature very prominently.

81.   ITS solutions were not covered in the LCMP, but non-motorised transport is an important part of the analysis and the recommendations. In the Smart Cities proposal, however, only a limited number of measures were included, such as covering pedestrian footpaths and cycle tracks along BRT with solar panels, cycle parking and intelligent pedestrian crossing systems, whereas the LCMP recommends primary infrastructure improvements. It would have been beneficial for the project as well as the city if the project team could have had a stronger input into the development of the Smart City proposal, as the solutions currently put forward in the proposal are too much technology driven and fail to address the non-motorised and public transport infrastructure deficit in the city.

Visakhapatnam

82.   *Local partner:* The development of the LCMP for Visakhapatnam was led by iTrans Anvita Arora.

83.   *Output:* Low – carbon Comprehensive Mobility Plan: Vishakhapatnam, by Anvita Arora, Ravi Gadepalli, Parvesh Kumar Sharawat, Anusha Vaid, Abhishek Keshri, November 2014 http://www.unep.org/transport/lowcarbon/PDFs/LCMP_Vizag.pdf

84.   *Summary:* For this report data on travel behaviour and other parameters have been collected in Vishakhapatnam to develop scenarios and recommendations for the city.

85.   *Evaluation comments:* Several LCMP recommendations were included in the Smart Cities proposal. For example, several corridors recommended by the LCMP for a Bus Rapid Transit system provided a basis for the planned metro lines (http://visakhapatnamsmartcity.com/logistics.html). The project, quite sensibly, recommended a Bus Rapid Transit (BRT) system, but the Metro system was considered to be more politically attractive by local and union level decision-makers.

86.   The Municipal Corporation currently cooperates with the U.S. Trade and Development Agency, which commissioned Klynveld Main Goerdeler (KPMG) to develop a Master Plan for the city. Senior government officials have committed to inform the KPMG project team about the LCMP and the work being carried out under the LCT India project and encourage them to incorporate recommendations from the Low-Carbon Comprehensive Mobility Plan into the overall master plan for the city, which they consider to be an important next step in the city's development.

Roadmaps

87.   *Output:* Scenarios and Roadmap for Intercity Transport in India: The Role of High Speed Rail, by   P. R. Shukla, Minal Pathak, Shivika Mittal, Subash Dhar,   September 2015 http://www.unep.org/transport/lowcarbon/PDFs/Role_of_High_Speed_Rail_Final.pdf

88.   *Summary:* Investment in rail in India is considered to be necessary considering the surging demand driven by population growth and urbanization. The author considers that High Speed Rail will make a contribution to reducing CO2 emissions, while providing a necessary connection between metropolitan areas, which will also create employment, provide access to health services and decrease congestion. Three thematic road maps on biofuels, electric mobility and high-speed rail are intended collectively to form the national action plan that was stated a key output in the project document. With their rather specific focus, the roadmaps do not fully encompass all relevant aspects of sustainable transport, which affects the take-up potential of this output.

89.   *Evaluation comments:* There is a good discussion of three particular corridors, which illustrates the potential of high-speed rail, but the roadmap section is too high-level with its recommendations to be policy relevant.

90.   *Output:* Second-Generation Biofuel Potential in India – Sustainability and Cost Considerations,   by   Pallav   Purohit,   Guenther   Fischer,   June   2014 http://www.unep.org/transport/lowcarbon/PDFs/Biofuels_Report.pdf

91.   *Summary:* This paper explores the use of biofuels as a fuel switch option for India and assesses current targets and future demand as well as the technical and economic potential of second-generation biofuels.

92.   *Evaluation comments:* The roadmap provides a reasonable overview of the necessary steps and barriers, in particular with regard to land-use, concluding that only second-generation biofuels will be a viable option for India.

93.   *Output: Electric Vehicle Scenarios and a Roadmap for India, by P. R. Shukla, Subash Dhar, Minal Pathak, Kalyan Bhaskar, November 2014* *http://www.unep.org/transport/lowcarbon/PDFs/ElectricVehicleScenarios.pdf*

94.   *Summary:* The roadmap develops scenarios for the deployment of electric vehicles in India and proposes policies for the national and local level to support electric mobility.

95.   *Evaluation comments:* Considering the main objective of this publication being a roadmap the policy recommendations section is very short and does not include some of the major policies such as fuel and vehicle taxation and regulation on the national level and road user charging on the local level.

Case studies and reports

96.   *Output:* Transport Scenarios for India Harmonising Development and Climate Benefits, by Subash Dhar, Minal Pathak, P.R. Shukla, November 2015
http://www.unep.org/transport/lowcarbon/PDFs/TransportScenarios.pdf

97.   *Summary:* A CO2 emission reduction strategy for India's transport sector needs to include low-carbon electricity supply for e-mobility, fuel economy, sustainable mobility, biofuels and sustainable logistics. Major policy recommendations would need to include a stronger focus on: alternative fuels and vehicles; sustainable urban planning strategies; promotion of non-motorized transportation; increased investment in rail infrastructure; increased efficiency in road logistics; focusing on a carbon market for India; securing financial assistance and, within these goals, harmonization of sustainable development and low-carbon transport actions.

98.   *Evaluation comments: The report brings together various thematic areas and scenarios and summarises them in an Integrated Low Carbon Transport Roadmap. The document is very comprehensive and scientifically sound. The recommendations could be pulled out into shorter and more target oriented format, e.g. on specific topics for specific target audiences.*

99.   *Output:* Toolkit for Comprehensive Mobility Plan (CMP) Revised (2014), Preparing a Comprehensive Mobility Plan (CMP), A Toolkit (Revised), by the Government of India, Ministry of Urban   Development,   September   2014
http://www.unep.org/transport/lowcarbon/PDFs/CMPToolkit_revised.pdf

100.   *Summary:* The revised toolkit provides a flexible scenario-based methodology to develop Comprehensive Mobility Plans that address accessibility, infrastructure and land use, safety, security, environmental impacts and economic aspects.

101.   *Evaluation comments:* The contribution to this toolkit is a highly valuable outcome of this project as cities in India are required to develop a CMP to access certain funding programs and will use the toolkit to do that. Climate change features much more strongly in the updated toolkit than in the previous version and the publisher, the Institute for Urban Transport gives credit to the LCT India project for that and also states that the revised toolkit aims to ensure that "a low-carbon mobility growth scenario for the city" is developed as part of the CMP process.

102.   *Output:* Assessment of Motor Vehicle Use Characteristics in Three Indian Cities, by Dinesh Mohan,   Rahul   Goel,   Sarath   Guttikunda,   Geetam   Tiwari,   June   2014
http://www.unep.org/transport/lowcarbon/PDFs/AssementMotorVehicle.pdf

103.   *Summary:* This report includes data of vehicle average age, average annual mileage, average fuel consumption in Delhi (capital city), Visakhapatnam in Andhra Pradesh and Rajkot in Gujarat. Real numbers of cars in the three cities are estimated to be between 100% and 150% less than government estimations. Also, fuel efficiency of new cars is up to 20-30% more than the average in the world and India has the lowest average weight of vehicles worldwide, which concludes that fuel efficiency standards will have an impact at a much faster rate than other developed countries. Hence, new fuel standards will lead to 90% of vehicles conforming to those standards within 15 years in India.

104.   *Evaluation comments:* Based on a mix of third party data and travel surveys in three cities assessments of vehicle use have been developed, which provides a useful insight on vehicle travel in urban areas in India.

105.   *Output:* Low Carbon City: A Guidebook for City Planners and Practitioners, by Subash Dhar, Minal Pathak, P. R. Shukla, August 2013
http://www.unep.org/transport/lowcarbon/PDFs/LowCarbonCity_Guidebook.pdf

106.   *Summary:* This guide was developed to inform local governments and practitioners to integrate low carbon objectives into the planning of cities.

107.   *Evaluation comments:* This guide provides in-depth information on a 2°C stabilisation pathway and what that would mean for India and what the contribution of Indian cities would be. To make the link to wider sustainable development objectives the publication makes the case for an integrated approach, which is also very valuable to generate support for low-carbon transport measures.

108.   *Output:* Impact Assessment and Management Framework for Infrastructure Assets: A Case Study of Konkan Railways, by Amit Garg, Prakriti Naswa, P.R. Shukla, August 2013
http://www.unep.org/transport/lowcarbon/PDFs/ImpactAssessment.pdf

109.   *Summary:* This report identifies climate variables, i. e. rainfall, to assess the risk potential of the infrastructure in question. In the case of the Konkan Railways the report concluded a low risk from rainfall due to sufficient investment in technology, communication, anti-collision devices etc. An impact matrix was developed in this report and can be used for other impact assessments for future infrastructure evaluations.

110.   *Evaluation comments:* This report is a contribution to the work package on climate proofing (WP5) and covers this thematic area to some extent, but only on a very specific case. Although LCT is primarily a climate change mitigation project, adaptation and resilience issues were discussed in the Project Document and in that regard it would have been useful to derive some broader resilience related recommendations from this case study.

111.   *Output:* NMT Infrastructure in India: Investment, Policy and Design, Geetam Tiwari, Deepty Jain, August 2013 *http://www.unep.org/transport/lowcarbon/PDFs/NMTInfrastructure_India.pdf*

112.   *Summary:* This report highlights a declining share of walking and bicycle use in India, even though NMT remains the major transportation mode for most Indian people. It is necessary to invest in NMT infrastructure to decrease the accident risks for pedestrians and provide a long-term infrastructure solution for non-motorized transportation.

113.   *Evaluation comments:* This is a very useful document, highlighting some of the challenges and opportunities for NMT in India and may provide a basis for linkages and synergies with the Share the Road project.

114.   *Output:* Low-Carbon Mobility in India and the Challenges of Social Inclusion: Bus Rapid Transit (BRT) Case Studies in India, by Mahadevia, D., R. Joshi, and A. Datey, 2012, *http://www.unep.org/transport/lowcarbon/PDFs/BRT_PolicySummary.pdf*

115.   *Summary:* This report was developed to assess the current state and progress in five Indian cities on public transport systems, which a particular focus on the BRT systems, which are considered to be the backbone of a low-cost and low-carbon transport system.

116.   *Evaluation comments:* The short and succinct way of highlighting implementation issues and presenting recommendations across city and national levels of government is more target oriented and with that very useful.

117.   *Output:* Gender Sensitive Transport Planning for Cities in India, by Darshini Mahadevia, Dec. 2015. http://www.unep.org/transport/lowcarbon/PDFs/genderSensitiveTransportPlanning.pdf and, one

118.   *Summary:* Mobility and gender inequality are important issues and the paper highlights the relevance in current discussions on low carbon transport in India. This includes discussions on the mobility of women and low-income groups and issues related to access such as participation in the labour market.

119.   *Evaluation comments:* The report provides some very useful information on gender specific mobility issues and travel patterns. The paper ends with recommendations on Gender-Sensitive Transportation Planning, which again highlight travel needs and challenges of women, but only places little emphases on the synergies between inclusive and gender oriented policy and planning and low-carbon transport.

120.   *Output:* Assessment of Heavy Duty Vehicle (HDV) Characteristics in Delhi, by Leeza Malik, Geetam Tiwari, Dinesh Mohan, Dec. 2015.
http://www.unep.org/transport/lowcarbon/PDFs/heavyDutyVehiclesDelhi.pdf

121.   *Summary:* This report aims to analyse fuel efficiency and the policy environment for heavy-duty vehicles in India. The report includes literature review of existing HDV studies in India, mapping of current heavy-duty vehicular technology (type of vehicle, age, fuel used) and fuel efficiency in Delhi, and discussions on policies promoting HDV modernisation and efficiency improvements.

122.   *Evaluation comments:* The paper provides a useful overview on freight transport in India and Delhi in particular and proposes policies for improving efficiency. The paper mentions national level policy examples for HDV efficiency, without giving concrete recommendations for the transferability to India or the relevance for the city level on which the report (according to the title) focuses on.

Journal articles

123.   Articles were published by the project team in a number of scientific journals in an effort to reach out to the science community and also to bridge the long time gap created by the delayed approval of the project extension. Through this, the project team was able to maintain a certain level

of activity and visibility of the project in the scientific community and at the same time generate some additional academic outputs that were developed by partners as an in-kind contribution. The following section reflects briefly on the three papers submitted by the project team to the Journal Energy Policy, which were published as part of a special issue.

124.   *Output:* Amit Garg, Prakriti Naswa, P.R. Shukla, Energy infrastructure in India: Profile and risks under climate change, Energy Policy, Volume 81, June 2015, Pages 226-238, ISSN 0301-4215, http://dx.doi.org/10.1016/j.enpol.2014.12.007.

125.   *Summary:* India has committed large investments to energy infrastructure assets-power plants, refineries, energy ports, pipelines, roads, railways, etc. The coastal infrastructure being developed to meet the rising energy imports is vulnerable to climate extremes. This paper provides an overview of climate risks to energy infrastructures in India and details two case studies – a crude oil importing port and a western coast railway transporting coal.

126.   *Evaluation comments:* The paper aims to make the link between the energy and transport sectors in two interesting case studies. Some more concrete policy recommendations could be derived from this paper.

127.   *Output:* Subash Dhar, Priyadarshi R. Shukla, Low carbon scenarios for transport in India: Co-benefits analysis, Energy Policy, Volume 81, June 2015, Pages 186-198, ISSN 0301-4215, http://dx.doi.org/10.1016/j.enpol.2014.11.026.

128.   *Summary:* Dependence on oil for transport is a concern for India's policymakers on three counts – energy security, local environment and climate change. Rapid urbanisation and accompanying motorisation has created some of the most polluting cities in India and rising demand for oil is leading to higher imports, besides causing more CO_2 emissions. The government of India wants to achieve the climate goals through a sustainability approach that simultaneously addresses other environment and developmental challenges. This paper analyses a sustainable low carbon transport (SLCT) scenario based on sustainable strategies for passenger and freight mobility, vehicle technologies and fuel using global CO_2 prices that correspond to 2 °C global stabilisation target. The scenarios span from years 2010 to 2050 and are analysed using the energy system model-ANSWER MARKAL. The SLCT scenario has improved energy security (cumulative oil demand lower by 3100 Mtoe), improved air quality (PM 2.5 emissions never exceed the existing levels) and the cumulative CO_2 emissions are lower by 13 billion CO_2 thereby showing that achieving development objectives with CO_2 co-benefits is feasible.

129.   *Evaluation comments:* Synergies and co-benefits with other key policy areas, such as energy security and health are vital for the support from key policy actors for low-carbon transport measures. The paper provides a very useful analysis, but concrete policy recommendations would need to be developed separately based on these results to make full use of these results.

130.   *Output:* Priyadarshi R. Shukla, Subash Dhar, Energy policies for low carbon sustainable transport in Asia, Energy Policy, Volume 81, June 2015, Pages 170-175, ISSN 0301-4215, http://dx.doi.org/10.1016/j.enpol.2015.02.021.

131.   *Summary:* Transformation of Asia's transport sector has vital implications for climate change, sustainable development and energy indicators. Papers in this special issue show how transport transitions in Asia may play out in different socio-economic and policy scenarios, including a low carbon scenario equivalent to 2 °C stabilization. Accounting for heterogeneity of national transport

systems, these papers use diverse methods, frameworks and models to assess the response of the transport system to environmental policy, such as a carbon tax, as well as to a cluster of policies aimed at diverse development indicators. The analysis shows that CO_2 mitigation in a transport system is achieved more effectively by aligning mitigation policies with sustainable development policies and measures such as mandates for mode share and choices such as urban design, information and communication systems, and behavioural measures. Authors therefore advocate policies that target multiple dividends vis-à-vis carbon mitigation, energy security and local air quality. Whereas four papers focus on emissions mitigation policies, one paper examines challenges to adapt fast growing transport infrastructures to future climate change induced risks. Collectively, the papers exemplify a set of policies and measures that can deliver co-benefits, and, also, demonstrate the use of methods, frameworks and models to delineate the optimal mix of such policies and measures.

132. *Evaluation comments:* The paper provides a very useful overview on transport policy interventions, mitigation and adaptation issues in Asia, which provides a good basis for an upscaling of the LCT activities beyond India. The paper also provides useful policy recommendations in the conclusion.

133. *Output:* Darshini Mahadeviaa, Deepali Advani Gender Differentials in Travel Pattern- the Case of a Mid-Sized City, Rajkot, India" has been published in the Transportation Research Part D, Volume 44, May 2016, Pages 292–30.

134. *Summary:* This paper is at the conjunction of arguments for gender equity in transport services on one hand and need to move towards low carbon transport on the other in a developing country city. The case study city, Rajkot, a mid-sized Indian city with mixed land use and limited public transport at the time of this study, has short trip lengths and low trip rates. But, even in this city there is gender disparity in travel pattern.

135. *Evaluation comments:* The paper aims to show the mobility challenges for women in Rajkot and highlights the issues with the currently inadequate walking infrastructure. This provides useful insights also for similar cities in India.

4.3 Effectiveness: Attainment of project objectives and results

Direct outcomes from reconstructed TOC

136. The objectives stated by the LCT project indicate that the project intended to make a contribution to India's climate change mitigation targets by:

   a. Create an enabling policy environment at national level for building a sustainable transport system;
   b. Increase cities' capacity to improve mobility while lowering CO_2 emissions.

137. The project's expected **outcomes** are:

   a. A National Transport Action Plan
   b. Three Low-Carbon Comprehensive Mobility Plans
   c. A website for information-sharing and project coordination

138.   The National Transport Action Plan is intended to provide recommendations on policy outcomes being generated by the guidelines for Comprehensive Mobility Plans, which were updated based on project deliverables.

Likelihood of impact using RoTI and based on reconstructed TOC

Cause and effect relationship and validity of drivers and assumptions

139.   There is likely to remain a legacy from the project with regard to long-term CO_2 emission reductions from the transport sector in India, triggered from specific actions and recommendations in the three pilot cities and guidelines developed by the project. Another important contribution of the project is a higher level of awareness of key climate mitigation measures, in particular at the national level and integration of key messages and recommendations into the toolkit for the development of Comprehensive Mobility Plans (CMP) by the Ministry of Urban Development.

140.   Initiatives such as the JNNURM and the Smart Cities mission were initiated independently from the project by the Government of India, but the project had the opportunity to inform aspects of these missions, in particular highlighting the sustainable development potential of climate change mitigation actions in the transport sector.

141.   The policy recommendations were geared towards avoiding infrastructure lock-ins (investments in particular in road infrastructure that locks society into a car-based travel future), utilising and expanding existing and planned infrastructure (NMT, BRT, Metro) and assessing the transferability also of fuel efficiency and land-use measures. The roadmaps focus more on the long-term, such as biofuels, electro mobility and high-speed rail. In both the national and local level oriented outputs of the project, the emphasis of concrete policy recommendations and infrastructural proposals could have been stronger.

142.   There is a slight imbalance, in particular in the LCMPs, between analytical content that is interesting from an academic perspective and the policy related content that is relevant from a decision maker's perspective. More concrete recommendations with regard to specific policies and infrastructure in the case study cities and specific policy recommendations for the state and national level conveyed in a target-oriented succinct way would have increased the influence on outcomes.

143.   The assumption that funding would be available for the recommended measures may hold true, but no direct link was generated by the project between the cities interested in pursuing recommended actions and potential funding agencies.

144.   Support from the local and national level, which can be considered to be the key driver towards outcomes may have required more attention on the policy process. The lack of information was one important factor that affected the lack of implementation action of sustainable urban transport measures and the project has made a valuable contribution to address this, but it was not the only one. While a lot of effort was put into the development of high quality content, less attention was given to active engagement with all relevant policy levels, which should have included the state-level too.

Progress towards impacts on city level and national levels

145.   Implementation focused activities were pursued for example a NAMA Facility (Nationally Appropriate Mitigation Actions) proposal for a Bus Rapid Transit (BRT) for Visakhapatnam was developed, but political change affected the submission of the proposal, which in the end was not finalized. Instead a Metro line has been proposed for funding to the national government with some corridors being based on the proposed BRT corridors.

146.   According to the project team the vast majority of financial resources went to India and the local and national case studies and action plans. Most of the UNEP staff time was an in-kind contribution. There was a well-established cooperation mechanism between UNEP, the UNEP DTU Partnership and the key partners from India, IIMA, IIT and CEPT, which contributed to functional and effective project operations and communications.

147.   The impact assessment carried out in the project was primarily on measuring the potential contributions of the project recommendations to local and national climate change mitigation targets and developing corresponding plans, guidelines and generating awareness.

Achievement of project goal and planned objectives

148.   Most output oriented project goals were achieved, whereas the impact on greenhouse gas emission reductions will only occur (if at all) over the longer term as described above. The sections below describe the concrete contribution of different work packages (WP) and their main activities to the two stated objectives.

149.   Sustainability indicators were developed (WP2), assessment at national level carried out (WP3) and case studies completed (WP4), largely according to plan. This set the scene for the project, but had little direct influence on the two stated objectives.

Contribution to the objective: "Create an enabling environment for coordinating policies at the national level to achieve a sustainable transport system"

150.   A dedicated framework for climate proofing has not been developed as planned in the initial Project Document. However, resilience and climate proofing issues feature in one report and one journal article (WP5).

151.   A methodology for low carbon mobility for cities (WP7) has been developed parts of which feature quite prominently in updated Toolkit for Comprehensive Mobility Plans (CMP) published by the Institute for Urban Transport that is provided by the union government to cities for the development of CMPs (which is the official term, LCMPs are the project term emphasizing the focus on climate).

152.   A number of the policy recommendations (WP10) and road maps have been developed in order to contribute to the national policy framework. More concrete and targeted oriented recommendations on harmonization of policies and processes would be required to make a more effective contribution to the stated objective.

Contribution to the objective: "Built capacity of cities in improving mobility with lower CO2 emissions"

153.   The fuel efficiency study that was planned in WP6 has been developed to some extent and published as a journal article on the Assessment of Motor Vehicle Use Characteristics in Three Indian Cities. As the paper was developed late in the project and developed as a scientific paper. This is a report produced in 2014, the findings of the study were presented in a workshop in 2012. The journal article with the same title was published in 2015.

154.   The Low Carbon Mobility Plans (LCMPs) planned in WP8 were developed largely according to plan. The ProDoc states that up to 4 cities would be selected. LCMPs were developed for 3 cities. The LCMPs made a good contribution to capacities in relevant local authorities as described before.

155.   The development of project proposals (WP9) was incorporated in the LCMP development. Some of these recommendations were integrated by the pilot cities in Smart City proposals, which is an indication for improved capacities as a result of the project. Visakhapatnam submitted a proposal with some of the LCMP recommendations to the German Development Bank KfW (Kreditanstalt für Wiederaufbau).

4.4   Sustainability and replication

156.   The focus on mid-sized cities is another indicator for an impact driven approach. The level of transferability can be considered higher as there is a large number of mid-sized cities in India as compared to megacities. The JNNURM, the main implementation mechanism for a sustainable transport project in India at the time, focused specifically on mid-sized cities, which was a main selection criterion for the project when reaching out to potential partner cities. The inclusion of the Asian Development Bank (ADB) also helps reaching out to potential funding agencies, critical for the implementation phase. The project also had discussions with the KfW.

157.   Replicability was an important selection criterion for the pilot cities. While this approach clearly contributed to the potential for the replication of the project findings, the thorough and academic approach sets the bar high for others to easily replicate it. However, the LCMP toolkit developed for the Ministry of Urban Development, will help in providing guidance for further low-carbon mobility plans in other cities in India.

158.   For additional outreach the programme Mobilise Your City and UN-Habitat were approached. Cooperation with the city network ICLEI (Local Governments for Sustainability) and the National Institute for Urban Affairs (NIUA) would be advisable. The city selection and the Memorandums of Understanding (MoU) created excitement and visibility of the cities in India, which may help in sustaining momentum at least for some time. A dedicated Work Package was supposed to develop specific project proposals. This work was not carried out as planned. The project was not able to contribute to the JNNURM as timings of this programme and the project were not in sync and the change in government in 2014 changed priorities. There was, however, some interaction with the Smart Cities proposals, even though limited and mostly indirect as the final phase of the project was affected by the project extension issues as described earlier. It would still be useful to have proposals, even as basic concept notes, available as envisaged (provided the content is readily available) to be able to react swiftly when a window opens.

159.   According to the project team a GEF proposal for India national project was developed to upscale the activities, but did not materialise as the Ministry of Urban Development did not pass the

proposal on to Ministry of Environment. A similar proposal may be submitted to the Green Climate Fund (GCF), focusing on roadmaps for India (with UNEP as partner) to close the gap between the INDC and local action. Outreach to the GCF started with an involvement in the final workshop.

4.5   Efficiency

160.   The project is based on a solid partnership, using existing relationships with key institutions, internationally and locally. The relationship between partners was considered smooth and effective. The size of the consortium was relatively small, but sufficiently equipped to deliver on the planned outputs. The project sought synergies with other transport projects in particular Low Carbon Transport India and the Africa. Closer cooperation, in particular with other organisations active on the area of sustainable transport in India, such as EMBARQ, ICLEI and UN-Habitat would have increased the efficiency.

161.   The planned duration of the project proved to be too short as the project applied for an extension because of underspending and delays in several project components. There have been several delays in finalizing the memorandums of understanding with the pilot cities which were considered to be vital for the development of the LCMPs. This led to delays in project processes and underspending. For future activities, a more pragmatic approach for the relationship with the partner city would be a sufficient basis for cooperation and would speed up the process.

162.   There was significant underspending during the first reporting period, in particular in the areas of personnel expenditure with 146,367 spent compared to the planned 214,480; 240,515 spent on administrative expenditures compared to the envisaged 469,958 and 211,586 spent on external services compared to the budgeted 352,623. No specific cost saving measures could be identified, which indicates that the underspending is largely a result of project delays. There could have been a greater level of flexibility to move ahead in cities despite the formal MoU process, i.e. providing advice if needed "off the record" or focusing on the local level while the new government formed on the national level. Budget that was returned to BMUB was $356,873.67.

163.   As a result of the delays in the project and the time-gap between application and approval of the project extension the project had only limited opportunity to directly contribute to the JNNURM and the Smart Cities Mission. This had an impact on the project´s effectiveness.

164.   The LCT India project cooperated with the Share the Road project and both projects participated in the Global South-South Development Expo. The project was presented at the World Urban Forum and various COPs. The final conference of the LCT India project also included a presentation of the Share the Road project in an effort to create synergies and support outreach. The cooperation with the Urban Mobility India conference – the main annual event on the topic in India – created a good level of visibility and various opportunities to disseminate project findings.

165.   Table 4 Financial management ratings

Financial management components	Rating	Evidence/ Comments
Attention paid to compliance with procurement rules and regulations	S	
Contact/communication between the PM & Division Fund Managers	S	
PM knowledge of the project financials	S	

PM responsiveness to financial requests	S	
PM responsiveness to addressing and resolving financial issues	MS	The project extension created substantial issues as described earlier. Timely delivery may have been more efficient.

Were the following documents provided to the evaluator:			
A.	Crystal Report	N/A	
B.	All relevant project Legal agreements (SSFA, PCA, ICA) if requested	Y	
C.	Associated Financial reports for legal agreements (where applicable)	Y	
D.	Copies of any completed audits	N/A	

Availability of project legal agreements and financial reports	S	
Timeliness of project financial reports and audits	S	
Quality of project financial reports and audits	S	
PM knowledge of partner financial expenditure	S	
Overall rating	S	

4.6   Factors affecting performance

Preparation and readiness

166.   The project was well prepared with an excellent project team and reasonably well established links to local and national policy makers.

167.   Stakeholders were identified in the Project Document at a high level (e.g. Ministry of Road Transport and Highways). According to the project team relevant stakeholders and policy makers from different ministries were invited for: the project's stakeholder consultation workshops based on the theme, invited members from different high level working groups who are responsible for influencing the policy making processes in India. The project steering committee members included stakeholders such as the Institute of Urban Transport.

168.   Later in the project all relevant institutions on the union and local level were involved in the project delivery. Little attention was given to the state level, which is a weakness as the state level also has an important role to play with regard to policy implantation, infrastructure funding and political support at the union level.

Project implementation and management

169.   Considering the relatively small size of the consortium, project management implementation was reasonably straightforward. The project was well managed with a clear role for UNEP, a substantive role for UNEP DTU and clearly defined inputs of the local knowledge partners. All partners had sufficient capacity and capability to deliver the assigned outputs.

Stakeholder participation, cooperation and partnerships

170.   The UNEP team was in a good position to manage the project. Other UNEP units or offices were not directly involved.

171.   Stakeholders (e.g. relevant ministries and agencies such as GIZ and the World Bank) were identified in the Project Document. Stakeholder engagement beyond the project consortium in the development of the initial project concept was not mentioned in the Project Document. However, a stakeholder workshop was organised by the project team in the initial phase of the project to present and discuss the project approach.

Communication and public awareness

172.   The project has made some efforts to disseminate the project findings and create public awareness. The website provides an overview of the key activities and outputs. Participation in relevant events and fora, such the COP 19 in Warsaw, COP 20 in Lima, the World Urban Forum and the Urban Mobility India are suitable opportunities to disseminate projects outputs. These events provided the opportunity for communication and also feedback-loops to inform the relevant phases of the project.

173.   Policy makers and selected journalists from Sri Lanka, Malaysia, Bhutan, Iran, the Philippines, Bangladesh were invited to the side-events to disseminate the project results and inspire other countries.

174.   A media roundtable was also organized in conjunction of the final workshop in Delhi.

Country ownership and driven-ness

175.   In the case study cities there has been good knowledge of the LCMPs and its main objectives and content, even among staff not directly involved in the development of the plans. There has been a certain level of ownership, even though the plans have been considered to be a product of the project and not of the city.

176.   The project contributed with its outputs to several policy and decision-making processes. This includes the Smart Cities proposals put forward by the three pilot cities, which have taken on board project recommendations at least to some extent.

177.   The CMP toolkit developed for the Ministry of Urban Development, will help providing guidance for further low-carbon mobility plans in other cities in India. The timeframe proved to be too short and the project applied for an extension because of delays in several project components and subsequent underspending.

Financial planning and management

178.   Generally, the financial management was well handled. Financial constraints became an issue when an anticipated (budget neutral) project extension was not approved for almost one year by the funding agency (BMUB). This created some challenges for the project to continue operation without spending until the extension was approved.

Supervision, guidance and technical backstopping

179.   Supervision and backstopping by UNEP was appropriate. UNEP DTU handled a substantive part of the day-to-day management in cooperation with UNEP.

Monitoring & Evaluation

180.   The project puts strong effort on ex-ante assessments, data collection and scenario development, but there was little attention given to the evaluation of the direct project impact.

181.   Monitoring and evaluation of the direct or indirect impact of the project was not planned in the project. Hence no dedicated indicators beyond the timely delivery of the outputs have been defined and tracked.

182.   The progress on this is monitored to some extent, but the main focus during the final year of the project (2015), which was also the year in which the Smart Cities proposals were developed, was on the final conference and the finalisation of project deliverables.

183.   The outcomes, such as the Smart Cities projects and national framework policies, are not in direct control of the project. While being very thorough on the technical side, the project analysis is weak on social and political factors, which only play a minor role in the project outputs, if discussed at all.

5   CONCLUSIONS AND RECOMMENDATIONS

5.1   Conclusions

184.   The LCT project aimed to contribute to reduce overall CO2 emissions of the transport sector in India by working with local and national policy partners, building capacities and developing scenario guidelines on policy recommendations. The project clearly has developed a large number of deliverables/outputs and has made a substantive effort to contribute with these outputs to tangible outcomes, namely national policy action and local implementation action.

185.   Close cooperation with the Ministry of Urban Development and other national stakeholders has contributed to awareness at the national level of the key pressing issues with regard to low carbon transport development, but the link to actual national policy change is yet to be made. At the local level stakeholder engagement in the development of Low Carbon Comprehensive Mobility Plans (LCMP) as well as their recommendations have created a high level of awareness in the participating three cities.

186.   There was little opportunity to contribute directly to local action under the JNNURM. This was out of the project's influence and was largely influenced by political change at the union level. With the Smart Cities Mission another opportunity arose to integrate LCMP policy recommendations into local (pilot) actions.

187.   In the context of this project there is a high level of dependence on national funding programmes such as the JNNURM, which was active in the first phase of the project and the Smart Cities programme which started in the last phase of the project

188.   The level of subsidiarity is relatively low with regard to mandate, ability, and, in particular, public financing, for local authorities to initiate and implement policy and infrastructure measures. Hence, active support for cities in India is highly valuable and so is the facilitation of dialogue with state and national funding and policy institutions to foster local implementation action.

189.   Considering the high climate change mitigation potential of the transport sector in India the LCT project outputs can provide a useful input into further work that may eventually lead to emission reduction impacts, the scenarios and guidelines, will continue to be promoted by UNEP and its project partners.

190.   While the high-level scenarios and guidelines are very useful for awareness raising, they sometimes lack the level of policy, technical and political detail that is needed to make the crucial step from a project output to actual outcomes that have a substantial CO2 emission reduction impact. For a higher level of impact, it would be advisable to develop shorter and more target group oriented policy recommendations that limit the analysis to the essential level and focus on policy relevant issues tailor-made for local, state and union level decision-makers. This would then need to be complemented with additional advice that addresses policy implementation and infrastructure investment issues. These recommendations could be short executive summaries of the existing documents that summarise key policy relevant issues, drivers, barriers and solutions. This could be complemented by advice on stakeholder engagement and coalition building with a focus on implementation of specific policies and infrastructures.

Table 5 Evaluation Ratings

Abbreviations: Highly Satisfactory (HS), Satisfactory (S), Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability is rated from Highly Likely (HL) down to Highly Unlikely (HU).

Criterion	Summary Assessment	Rating
A. Strategic relevance	The LCT project is highly relevant for both UNEP umbrella projects, as it aims to contribute directly to climate change mitigation and the support for deployment of energy-efficient transport technologies.	**S**
B. Achievement of outputs	The project generated an impressive number of outputs at a high level of quality from a scientific perspective. The LCMPs made a good contribution to local decision making processes. The updated CMP guidelines published the the GoI are a highly visible output that will contribute to the replications of LCT recommendations.	**S**
C. Effectiveness: Attainment of project objectives and results	Considering the long time-lag between application and approval of project extension the achievement of overall project objectives was a challenge which however was managed relatively successfully.	**MS**
1. Achievement of direct outcomes	As the LCMPs were designed for the cities and developed with substantive local participation the local level outcomes can be considered satisfactory although the plans have no statutory status. The integration of some of the recommendations into Smart Cities proposals has the ability to generate some linkages between project outputs and outcomes. National level project outputs largely remain to be informative, but the updated CMP guidelines will help replicating the LCMP	MS

Criterion	Summary Assessment	Rating
	approach in other cities in India.	
2. Likelihood of impact	Provided some of the recommendations that have been incorporated into smart cities proposals are being implemented as part of the respective projects, there is likely to be some direct impact. At this stage however no direct impact can be measured.	MS
3. Achievement of project goal and planned objectives	The achievement of project goals and objectives can be considered moderately satisfactory. Capacities at the city level have been improved to some extent, although a comprehensive enabling environment to coordinate low-carbon transport policies at the national level is not yet operational.	MS
D. Sustainability and replication	The selection of mid-size cities made a contribution to the replicability of the project results and the inclusion of major transport policy knowledge partners in India ensures a certain level of sustainability. IIT, IIM and CEPT are likely to continue to disseminate the project results along with UNEP and the UNEP DTU Partnership.	ML
1. Financial	Several key individuals from the project consortium including the project manager are permanent staff at their home institutions, which helps retain institutional knowledge beyond the project lifetime including the continuation of dissemination as part of related projects and events.	L
2. Socio-political	Political change is a key feature of the vibrant democracy of India. This however, creates challenges with regard to the sustainability and continuity of institutional capacity and knowledge. The project has made a good effort to involve political and administrative actors to ensure a certain level of continuity and institutional knowledge of the LCT recommendations	MS
3. Institutional framework	One important factor to generate institutional continuity is targeting both the political and administrative levels in key relevant institutions. This has been done to some extent by the project team, but in some cases, e.g. Rajkot and Visakhapatnam this was not possible, for example due to the lack of appropriate administrative counterparts.	ML
4. Environmental	One of the core objectives of the project was addressing environmental issues, in particular climate change. The scenarios and plans developed for the project focused specifically on CO2 emission reduction impacts. Synergies with other aspects, such as air quality are mentioned, but could have been highlighted even stronger.	ML
5. Catalytic role and replication	Replication was the major objective behind the selection of mid-sized cities. The replication and dissemination potential has not been sufficiently exploited, e.g. networks such as ICLEI were not directly involved in dissemination activities and limited efforts (e.g. development of a draft proposal for the GEF) were made to replicate or upscale the project. However,	L

Criterion	Summary Assessment	Rating
	the involvement of IUT and the CMP guidelines will make a good contribution to the replication of the recommnadations.	
E. Efficiency		MS
F. Factors affecting project performance		S
1. Preparation and readiness	The project was well prepared with an excellent project team and reasonably well established links to local and national policy makers.	S
2. Project implementation and management	Considering the relatively small size of the consortium, project management and implementation was reasonably straightforward. The project was well managed with a clear role for UNEP, a substantive role for UNEP DTU and clearly defined inputs of the local knowledge partners. All partners had sufficient capacity and capability to deliver the assigned outputs.	S
3. Stakeholders participation, cooperation and partnerships	Stakeholders (e.g. relevant ministries and agencies such as GIZ and the World Bank) were identified in the Project Document. Stakeholder engagement beyond the project consortium in the development of the initial project concept was not mentioned in the Project Document. However, a stakeholder workshop was organised by the project team in the initial phase of the project to present and discuss the project approach. The UNEP team was in a good position to manage the project. Other UNEP units or offices were not directly involved.	S
Communication and public awareness	The project has made some efforts to disseminate the project findings and create public awareness. The website provides an overview of the key activities and outputs. Participation in relevant events and fora, such the COP 19 in Warsaw, COP 20 in Lima, the World Urban Forum and the Urban Mobility India are suitable opportunities to disseminate projects outputs. These events provided the opportunity for communication and also feedback-loops to inform the relevant phases of the project.	S
4. Country ownership and drivenness	In the case study cities there has been good knowledge of the LCMPs and its main objectives and content, even among staff not directly involved in the development of the plans. There has been a certain level of ownership, even though the plans have been considered to be a product of the project and not of the city. At the national level there is a fairly high level of ownership that is reflected in the updated CMP guidelines, published the the GoI.	MS
5. Financial planning and management	Generally, the financial management was well handled. Financial constraints became an issue when an anticipated (budget neutral) project extension was not approved for almost one year by the funding agency (BMUB). This created some challenges for the project to continue operation without	MS

Criterion	Summary Assessment	Rating
	spending until the extension was being approved.	
6. Supervision, guidance and technical backstopping	Supervision and backstopping by UNEP was appropriate. UNEP DTU handled a substantive part of the day-to-day management in cooperation with UNEP.	S
7. Monitoring and evaluation	The project puts strong effort on ex-ante assessments, data collection and scenario development, but there was little attention given to the evaluation of the direct project impact.	MU
a. M&E Design	Monitoring and evaluation of the direct or indirect impact of the project has not planned in the project. Hence no dedicated indicators beyond the timely delivery of the outputs have been defined and tracked.	MU
b. Budgeting and Funding for M&E	-	-
c. M&E Plan Implementation	No specific monitoring and evaluation plan has been developed.	MU
Overall project rating		S

5.2 Lessons Learned

191.   There are a number of lessons learned that can be picked up by similar projects or follow-up activities, both on the subject area of sustainable urban mobility and climate change project in India more generally.

Lessons from working in India

192.   India is a very challenging policy environment with fragmented responsibilities, changing and sometimes volatile political support and a highly dynamic development context. Considering these challenges, a focus on stakeholder relationships, coalitions and political support is important and the project has made good progress on that on the national level with a substantive involvement of the Institute of Urban Transport.

Lessons from integrated urban mobility planning (horizontal integration)

193.   The project has done a good job in creating a data basis on which policy recommendations and infrastructure decisions can be based and has developed guidance documents to replicate these activities in other cities in India (e.g. Low Carbon City: A Guidebook for City Planners and Practitioners). While providing a solid foundation on the basics of sustainable low-carbon transport and corresponding data, the papers may be too academic for many decision makers, which corresponds to the fact that very few local interview partners were aware of specific recommendations from project guidelines and studies.

194.   The process of developing the LCMPs, however, was considered to be highly valuable for local awareness for sustainable low carbon transport issues and national visibility as part of an

international project. Hence, it is fair to say that the process was equally important as the actual outputs of the project.

Lessons from the integration of local, state and national policies (vertical integration)

195.   Vital for the generation of outcomes (i.e. policies that can have an actual impact) is the cooperation with all three relevant levels of government (municipal, state and union level). For this to succeed the facilitation of the process by organisations such as UNEP can be very helpful, which was highlighted by several local partners and stakeholders.

5.3   Recommendations

196.   Considering the fact that the project ended in December 2015 there may be little scope to implement recommendations within the framework of the LCT project, but there may be follow-up activities that can take-up the recommendations. There will be some level of continuity provided by continued promotion of the LCT project's outputs by UNEP and its project partners in the related activities. This may include incorporating recommendations on biofuels, electric vehicles and fuel efficiency into on-going activities of the Global Fuel Economy Initiative. Similarly, regional outreach activities of the Share the Road project that have started at the Urban Mobility India conference could incorporate and further support advice and capacity building on non-motorised transport issues at the local level in India.

Strengthening the focus on local implementation actions

197.   An update of the LCMP fact sheets, focusing on the concrete link between project recommendations and opportunities for implementation, for example through all the Smart Cities Mission would be highly desirable. This would be highly valuable to show the contribution of the project to concrete policy and investment decisions, which would help lifting the profile of the project in particular in the relationship with the Government of India and the funding agency.

Action: Development of fact sheets on the link to the Smart Cities Mission

Mapping institutional arrangements in case study cities and at national level

198.   A short and succinct summary report of the policy processes and the challenges and opportunities for a low carbon transport policy in the Indian institutional and political context would create an excellent added value to the project's technical documents.

Action: Development of briefing documents on institutional settings in India

Stronger emphasis on policy processes and coalition building

199.   In addition to specific technical advice, the provision of advice by UNEP to policy makers in India on stakeholder engagement, political coalitions and funding opportunities would be vital to bridge the gap between technical potential and actual implementation.

Action: Development of policy briefs on key policy actors and coalition building potential

Upscaling in India and beyond

200.   Cooperation between UNEP and city networks (such as ICLEI) and national entities would be useful to replicate the LCT approach to other cities in India and other countries in Asia and beyond. Linkages could be sought to initiatives such as the Cities Clean Air Partnership (http://cleanairasia.org/ccap/), the Urban Mobility SOLUTIONS Network (http://www.urban-mobility-solutions.eu), SUTP (https://www.sutp.org/en/) and MobiliseYourCity (http://www.mobiliseyourcity.net/en/) to disseminate findings and continue the LCT work. These programmes are open to cooperation and UNEP is welcome to seek opportunities for dissemination, outreach and replication with them.

Action: Team-up with other relevant international networks and initiatives

Facilitate the dialogue with funding agencies and programmes

201.   To boost the impact and to assist in the implementation of the recommendations from the various outputs the facilitation by UNEP of a dialogue between decision makers and national, multilateral and international funding institutions, such as the Asian Development Bank, the GEF, national development banks and providers or technical assistance.

Action: Organise meetings with development banks and city representatives to discuss the implementation to LCT recommendations.

6   ANNEXES

6.1   Completed Matrix of the overall quality of project design

Project context	Addressed by Project Document	Evaluation Comments	Rating
Does the project document provide a description of stakeholder consultation during project design process?	Yes	There was active stakeholder participation, in particular during the LCMP development.	S
Does the project document include a clear stakeholder analysis? Are stakeholder needs and priorities clearly understood and integrated in project design? (see annex 9)	Yes	The project aimed to support India in delivering on the National Action Plan on Climate Change and appropriate stakeholders at the national level were identified. Municipal corporations were the main partners at the local level and key stakeholders were involved and had a substantive input into the LCMP development.	MS
Does the project document entail a clear situation analysis?	Yes	The situational analysis focuses in depth on technical details, but gives little attention to societal and political aspects.	S
Does the project document entail a clear problem analysis?	Yes	This is the main focus of the project analysis and the scenario development.	S
Does the project document entail a clear gender analysis?	Yes	Gender analysis is included in the LCMPs and is the focus of specific deliverables on access and equity.	S
Relevance				**Rating**

Is the project document clear in terms of relevance to:	i) Global, Regional, Sub-regional and National environmental issues and needs?	Yes	Good recognition of regional corporation opportunities with a focus on mid-sized cities. Some contribution to India´s international climate change targets (INDC).	S
	ii) UNEP mandate	Yes	Considering the focus on climate change mitigation in the transport sector in India the project appears to be a very relevant contribution to the programmatic focus on climate change mitigation, which is one of the seven cross-cutting thematic priorities for UNEP.	S
	iii) the relevant GEF focal areas, strategic priorities and operational programme(s)? (if appropriate)		N/A	
	iv) Stakeholder priorities and needs?	Yes	The project aimed to contribute to the National Action Plan on Climate Change, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and the Smart Cities Mission and the development of the Intended Nationally Determined Contribution	MS
Is the project document clear in terms of relevance to cross-cutting issues	i) Gender equity	Yes	A dedicated planning guide and gender sections in the LCMPs were developed.	S
	ii) South-South Cooperation	Partially	The ProDoc mentions linkages to the ASEAN Climate Change Network, the Global Fuel Economy Initiative and other relevant UNEP projects as well as synergies with other projects in India.	MS
	iii) Bali Strategic Plan	Yes		S
Intended Results and Causality				

Are the outcomes realistic?	Yes			MS
Are the causal pathways from project outputs [goods and services] through outcomes [changes in stakeholder behaviour] towards impacts clearly and convincingly described? Is there a clearly presented Theory of Change or intervention logic for the project?	Yes	The basic steps are covered on the ProDoc, but without a plan on how to move from outputs to outcomes and impacts.		MS
Is the timeframe realistic? What is the likelihood that the anticipated project outcomes can be achieved within the stated duration of the project?	No			S
Are activities appropriate to produce outputs?	Yes			MS
Are activities appropriate to drive change along the intended causal pathway(s)?	Yes	The project makes a solid effort to establish a baseline with regard to data and scenario analysis, which is helpful for decision making processes. The opportunity to support the development of the updated CMP guidelines contributed to the longer term impact of the project, provided that recommendations are taken further and measures are implemented.		MS
Are impact drivers and assumptions clearly described for each key causal pathway?	Partially	The drivers and assumptions for the various scenarios are very well described. However, the barriers and opportunities of policy implementation as well as political and institutional structures that may affect both policy implementation as well as their effectiveness, and with that the impact on GHG emissions, is barely discussed in the project outputs.		MS
Are the roles of key actors and stakeholders clearly described for each key causal pathway?	Partially	The appropriate actors and most of the stakeholders are identified by the project, but their role from the initial discussion of potential policy and infrastructure interventions, to the implementation and delivery is not discussed appropriately in the project outputs.		MS

Is the ToC-D terminology (*result levels, drivers, assumptions etc.*) consistent with UNEP definitions (*Programme Manual*)	No	Different terminologies are used in the project documents, which may be driven partly by the fact that the project was initiated by the German environment ministry and driven to a large extent by the UNEP DTU partnership as well	MU
Efficiency			
Does the project intend to make use of / build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programs and projects etc. to increase project efficiency?		The project is based on a solid partnership, using existing relationships with key institutions, internationally and locally.	HS
Sustainability / Replication and Catalytic effects			
Does the project design present a strategy / approach to sustaining outcomes / benefits?	Yes		MS
Does the design identify social or political factors that may influence positively or negatively the sustainability of project results and progress towards impacts?	Partially	While being very thorough on the technical side, the project analysis is weak on social and political factors, which only play a minor role in the project outputs if discussed at all.	MS
Does the design foresee sufficient activities to promote government and stakeholder awareness, interests, commitment and incentives to execute, enforce and pursue the programmes, plans, agreements, monitoring systems etc. prepared and agreed upon under the project?	Partially	A dissemination Work Package planned typical dissemination activities. Sustaining the results was also envisaged through the JNNURM.	MS
If funding is required to sustain project outcomes and benefits, does the design propose adequate measures / mechanisms to secure this funding?	Yes	There are some core project team members who are permanent staff members at their home institutions a good level of retention of institutional knowledge is assured.	S

Are financial risks adequately identified and does the project describe a clear strategy on how to mitigate the risks (in terms of project's sustainability)	Yes	The main financial issues of the project were linked to the underspending on the first phase of the project, which led to a request for a budget neutral project extension. This extension was only approved in summer 2015, after almost one year, which created issues with regard to sustaining the project activities. Considering these difficulties, the project did a good job in sustaining momentum and visibility. Budget returned to BMUB was $ 356,873.67.	MS
Does the project design adequately describe the institutional frameworks, governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. required to sustain project results?	No	The project is focused primarily on technical issues and paid little attention to institutional frameworks and governance structures.	MU
Does the project design identify environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to affect the environment, which, in turn, might affect sustainability of project benefits?	Partially	Sectors around mobility behaviour that can affect recommendations made by the project were reasonably well discussed in the project outputs.	S
Does the project design foresee adequate measures to promote replication and up-scaling / does the project have a clear strategy to promote replication and up-scaling?	Yes	Replicability was an important selection criterion for the pilot cities. While this approach clearly contributed to the potential replication of the project findings, the thorough approach sets the bar high for others to easily replicate it. However, the LCMP toolkit developed for the Ministry of Urban Development, will help provide guidance for further low-carbon mobility plans in other cities in India.	MS
Are the planned activities likely to generate the level of ownership by the main national and regional stakeholders necessary to allow for the project results to be sustained?	Yes	In the three cities surveyed there has been good knowledge of the LCMPs and it's main objectives and content, even among staff not directly involved in the development of the plans. There has been a certain level of ownership, even though the plans have been considered to be a product of the project and not of the city.	S
Learning, Communication and outreach			

Has the project identified appropriate methods for communication with key stakeholders during the project life?	Yes	Stakeholder participation was a major part of the development of the LCMPs focusing primarily on the local authorities. While there has been some public participation organized by the municipal corporations there could have been more active engagement of the public and campaigning, which could have also assisted in creating broader buy-in.	S
Are plans in place for dissemination of results and lesson sharing.	Yes	The project reached out to multipliers beyond the stakeholders involved in the project, such as Cooperation for Urban Mobility in the Developing World (CODATU) and UN-Habitat. Cooperation with the city network ICLEI and the National Institute for Urban Affairs (NIUA) would be advisable. IIT, IIM and CEPT are likely to continue to disseminate the project results along with UNEP and the UNEP DTU Partnership.	MS
Do learning, communication and outreach plans build on analysis of existing communication channels and networks used by key stakeholders ?	Partially	The website is considered to be one of the key dissemination tools. Networking and outreach was not a core component of the project.	MS
Risk identification and Social Safeguards			
Are all assumptions identified in the ToC presented as risks in the risk management table? Are risks appropriately identified in both, ToC and the risk table?	No		MS
Is the risk management strategy appropriate?	Partially		S
Are potentially negative environmental, economic and social impacts of projects identified?	Partially	Several outputs focus on the linkages between policy objectives and a separate paper on the opportunities for co-benefits and not on risks for trade-offs.	MS
Does the project have adequate mechanisms to reduce its negative environmental foot-print?	No	No offsetting of carbon emissions, e.g. generated by project travel was envisaged.	U

Have risks and assumptions been discussed with key stakeholders?	Partially	Assumptions of their scenarios have been discussed with stakeholders, wider risks potentially associated with the projects recommendations have not.	MU
Governance and Supervision Arrangements			
Is the project governance model comprehensive, clear and appropriate? (*Steering Committee, partner consultations etc.*)	Yes	The project governance structure was clear and appropriate and the involvement of some key potential partners, such as GIZ and ADB was sensible.	S
Are supervision / oversight arrangements clear and appropriate?	Yes	Management arrangements were appropriate. The project was jointly managed by UNEP and UNEP DTU, who had a close link to the local implementation partners.	HS
Management, Execution and Partnership Arrangements			
Have the capacities of partners been adequately assessed?	Yes	The project was well prepared with an excellent project team and reasonably well established links to local and national policy makers.	HS
Are the execution arrangements clear and are roles and responsibilities within UNEP clearly defined?	Yes	Considering the relatively small size of consortium, project management implementation was reasonably straightforward. The project was well managed with a clear role for UNEP.	HS
Are the roles and responsibilities of external partners properly specified?	Yes	The UNEP DTU Partnership had a substantive role and local knowledge partners had clearly defined inputs.	S
Financial Planning / budgeting			

Are there any obvious deficiencies in the budgets / financial planning? (*coherence of the budget, do figures add up etc.*)	No			MS
Is the resource utilization cost effective?	Yes			S
How realistic is the resource mobilization strategy?	Yes	Very realistic as the funding agency initiated the project.		MS
Are the financial and administrative arrangements including flows of funds clearly described?	Yes	The management Work Package description is very basic. The financial and administrative arrangements are not well described in the project documentation, but there are no major issues in this regard within the consortium.		MS
Monitoring				
Does the logical framework	• capture the key elements of the Theory of Change for the project?	Yes	All the key elements of the theory of change feature somehow in the project documentation starting from the actual project outputs to the outcomes and the policy and infrastructure changes the project aims to trigger and the resulting CO2 emissions reductions. However, there is no clear roadmap how the project outputs can move along further in the ToC logic.	S
	• have 'SMART' indicators for outcomes and objectives?	Partially	Limited to the outputs and their resources and timing.	S
	• have appropriate 'means of verification'?	Partially	The means of verifications are limited to the outputs. This also includes the Toolkit on Preparing a Comprehensive Mobility Plan (CMP), which can be considered as a policy level outcome of the project. Means of verification related to impacts (within the duration of the project are	MS

			not provided)	
Are the milestones appropriate and sufficient to track progress and foster management towards outputs and outcomes?	Partially	The limited number of milestones are sufficient to track progress towards the outputs, but not towards the outcomes.	MS
Is there baseline information in relation to key performance indicators?	Partially	Basic baseline data is provided in the document.	MS
How well has the method for the baseline data collection been explained?	Yes	Data collection and baseline development for the studies developed by the project is very well explained in the project documents.	S
Has the desired level of achievement (targets) been specified for indicators of outputs and outcomes?	Yes	Both outputs and desired outcomes have been sufficiently specified in the project documents.	S
How well are the performance targets justified for outputs and outcomes?	Partially	The targets are limited to the delivery of the outputs. Beyond that there are no additional performance targets for the project.	MU
Has a budget been allocated for monitoring project progress in implementation against outputs and outcomes?	Partially	There is a reasonable link between resource allocation and progress in output generation, less so with regard to outcomes.	MS
Does the project have a clear knowledge management approach?	Partially	Considering the small consortium and good relationships between project partners no sophisticated knowledge management systems were considered to be necessary.	MS
Have mechanisms for involving key project stakeholder groups in monitoring activities been clearly articulated?	Yes	Stakeholder engagement is mentioned in the ProDoc and key stakeholders are identified.	MS

Evaluation			
Is there an adequate plan for evaluation?	No	Project evaluation was not planned.	U
Has the time frame for evaluation activities been specified?	No	No resources for evaluation activities have been allocated.	U
Is there an explicit budget provision for mid-term review and terminal evaluation?	Partially	Both midterm and final reports have been developed by the project, both of which focus almost exclusively on processes and outputs.	MU
Is the budget sufficient?	Yes	The budget has been sufficient. There is even likely to be unused funding returned to the funding agency.	S
Stakeholder Assessment			
Have all stakeholders who are affected by or who could affect (positively or negatively) the project been identified and explained in the stakeholder analysis?	Yes	Most major stakeholders at national and local level have been identified.	S
Did the main stakeholders participate in the design stages of the project and did their involvement influence the project design?	Yes	The project itself was initiated by the German environment ministry (BMUB) and its International Climate Initiative (ICI). A stakeholder workshop was organized in 2009 in cooperation with the Ministry of Environment to ensure that the project delivers on the National Action Plan on Climate Change and to seek endorsement from the national government. In a later stage the Ministry of Urban Development was involved.	HS
Are the economic, social and environmental impacts to the key stakeholders identified, with particular reference to the most vulnerable groups ?	Yes	Specific outputs on co-benefit opportunities and equity issues were planned.	S

Have the specific roles and responsibilities of the key stakeholders been documented in relation to project delivery and effectiveness?	Yes	The municipal corporations and ministries involved had a certain level of ownership and reasonably specific roles in the project.	S
For projects operating at country level, are the stakeholder roles country specific? Is there a lead national or regional partner for each country/region involved in the project?	Yes	Initially the Ministry of Environment, as the lead agency on climate change issues, was involved and at a later stage the Ministry of Urban Development was the main partner for the cooperation with the cities.	S

6.2   Project Evaluation Matrix

			Evaluation question	Comments and remarks for case studies	Sources
A.	Relevance for UNEP's Mandate		Are the interventions likely to have any lasting differential impacts on gender equality and the relationship between women and the environment?	Yes, if the recommendations from equity paper were taken into account.	Equity paper and discussions with PR Shukla, Geetam Tiwari
			To what extent have the projects applied the UN Common Understanding on HRBA?	There is a basic recognition that access mobility here is a basic human right.	Throughout the reports and case studies
			Are the projects in line with the UN Declaration on the Rights of Indigenous People, and have they pursued the concept of free, prior and informed consent?	No	
			Are there any aspects of the projects that could be considered as examples of South-South Cooperation?	Some dissemination linkages to activities in Africa (south-south cooperation) via Share the Road.	Final workshop
		Relevance of the subprojects for the umbrella project	Have the subprojects aligned their indicator frameworks with the umbrella project?	The primary objective is the reduction of greenhouse gas emissions with a recognition of the additional co-benefits such as energy efficiency, access, mobility, health, and safety, which is broadly in line with the framework of the umbrella project. A set of sustainability indicators has been developed in WP 2.	Project reports
			Have the subprojects provided contributions to the stated outcomes of the umbrella project?	Yes. With its recommendations the LCT project aimed to contribute to the deployment of energy-efficient transport policies and technologies in India	Project reports

B.	**Achievement of Outputs**		Have the subprojects managed to achieve their expected outputs? (sample) What are the reasons behind the success (or failure) of the (sub-)projects in producing their different outputs and meeting expected quality standards?	Most of the intended outputs were delivered, although some adjustments to the work programme were deemed necessary, e.g. a fourth pilot city withdrew from the project, which meant that only three cities developed an LCMP.	Project reports
C.	**Effectiveness: Attainment of Objectives and Planned Results**		Did the TOC accurately reflect assumptions and drivers for the projects to achieve their intended results?	Considering the high climate change mitigation potential of the transport sector in India and the high-level of transferability of the selected mid-sized cities, the LCT project is likely to contribute to emission reduction impacts over the long-term as it's outputs, in particular the scenarios and guidelines, will continue to be promoted by UNEP and its project partners.	Discussion with UNEP and local partners
			Were the immediate outcomes attained?	One direct outcome was the update of the CMP guidelines published by the GoI. Other outcomes, such as local and national policy and investment change will take longer to materialise.	Project reports

			How likely will the interventions lead to the independent impact?	Some of the LCMP recommendations have been integrated into Smart Cities proposal, which may generate an impact once implemented. The contribution to the national CMP guidelines may initiate longer term impacts once other cities have adopted recommendation and implemented measures.	Project reports, interviews, newsletter, website, CMP guidelines
D.	**Sustainability and replication**	**project sustainability**	Is the level of ownership by the main stakeholders sufficient to allow for the project results to be sustained? Are there sufficient government and other key stakeholder awareness, interests, commitment and incentives? Did the sub-projects conduct 'succession planning' and implement this plan? Was lasting capacity built for key stakeholders, expected to carry project results into the future? To what extent do unresolved gender inequalities affect sustainability of project benefits?	The LCMPs aimed to focus on inclusive, low-carbon and sustainable urban transport, going beyond the Comprehensive Mobility Plans that have been developed by the cities previously. A substantive part of the resources went into these activities, which seems appropriate. Many of the case studies and reports formed the basis for the LCMPs and the toolkit is an important dissemination product. Time and effort spend on these outputs appears appropriate.	Project reports, interviews

		financial sustainability	To what extent are the continuation of project results and the eventual impact of the projects dependent on financial resources? What is the likelihood that adequate financial resources will be or will become available to use capacities built by the projects? Are there any financial risks that may jeopardize sustenance of project results and onward progress towards impact?	Several key individuals from the project consortium including the project manager are permanent staff at their home institutions, which helps retaining institutional knowledge beyond the project lifetime including the continuation of dissemination as part of related projects and events	Project reports, outputs, interviews
		institutional sustainability	To what extent is the sustainability of the results and onward progress towards impact dependent on issues relating to institutional frameworks and governance? How robust are the institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. required to sustaining project results and to make those results contribute to changes in human behaviour and impact on environmental benefits?	There is still a certain level of recognition of the LCMP process and recommendations in the participating pilot cities, even those several of the participating individuals have moved on. The updated LCMP guidelines published by the Ministry of Urban Development will contribute to a certain level of institutional sustainability.	Project reports, outputs, interviews

		environmental sustainability	Are there any environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to affect the environment, which, in turn, might affect sustainability of project benefits? Are there any foreseeable negative environmental impacts that may occur as the project results are being up-scaled?	Relevant project outputs such as the roadmap on biofuels or electric mobility considered also technological risks. The LCMP recommendations focused primarily on non-technology solutions such as public transport non-motorised transport.	Project reports and outputs
		social sustainability	Are there any social or political factors that may influence positively or negatively the sustenance of project results and progress towards impacts? To what extent do unresolved gender inequalities affect sustainability of project benefits?	Barriers and opportunities of policy implementation as well as political and institutional structures that may affect both policy implementation as well as their effectiveness and with that the impact on GHG emissions is barely discussed in the project outputs. Gender issues are discussed to some extent, in particular in the output dedicated to equitable mobility.	
		Catalytic role and replication	Have the (sub-)projects have catalyzed behavioural changes in terms of use and application, by the relevant stakeholders, of capacities developed?	The update of the CMP guidelines by the government shows a considerable level of mind shift and similarly the long-term engagement with the pilot cities has contributed to a different perspective on sustainable mobility.	Project reports and outputs
			Have the (sub-)projects provided incentives (social, economic, market based, competencies etc.) to contribute to catalyzing changes in stakeholder behaviour?	No.	Project reports

				Have the (sub-)projects(c) contributed to institutional changes, for instance institutional uptake of project-demonstrated technologies, practices or management approaches?	No.	Project reports, interviews
				Have the (sub-)projects(c) contributed to policy changes (on paper and in implementation of policy)?	The project put great emphasis on the quality of the outputs. The updated CMP guidelines are a direct outcome. The integration of some of the LCMP recommendations into Smart City proposals can be considered as outcomes of the project.	Interviews, Guidelines, Smart City proposals
				Have the (sub-)projects(c) contributed to sustained follow-on financing (catalytic financing) from Governments, private sector, donors etc.?	No evidence on this yet, but there are possibilities for funding of implementation actions through the Smart Cities Mission and there are proposals being discussed for follow-up projects. As the project intends to influence long-term policy change, no measures to verify the outcomes and impacts of the project beyond its lifetime have been planned for.	Interviews
				Have the (sub-)projects(c) (f) created opportunities for particular individuals or institutions ("champions") to catalyze change (without which the project would not have achieved all of its results)?	The three pilot cities act as national champions for sustainable mobility in India and their participation in the project may have contributed positively in their current role in the smart cities programme.	Interviews
				Have any lessons and experiences of the sub-projects been integrated into new or follow-up activities and projects among the same set of stakeholders?	There were reasonable dissemination activities and the project was fairly visible at the national level, had a good level of visibility local level, and has some level of visibility at the international level. The approach to policy advice and actually pursuing specific initiatives could have been stronger.	Project reports, interviews
				Is there evidence of replication of sub-projects and/or their lessons and experiences in other geographies?	Outreach activities to Africa as part of the final workshop.	Interviews

			Have projects been replicated on a larger scale or scaled up? If yes, what are the factors that may influence replication and scaling up of project experiences and lessons?	The project team has a number of suitable ideas to sustain the project outcomes, such as exploring opportunities for an upscaling project funded by the Green Climate Fund and seeking synergies to other relevant projects. However, there is no coherent long-term strategy to sustain the project beyond its lifetime.	Project reports, interviews
E.	**Efficiency**	**cost effectiveness**	has there been any duplication of efforts between UNEP and others, within or outside of the project?	The project did not create any duplication and synergies with other initiatives were sought where feasible. Closer cooperation, particularly with ICLEI and UN-Habitat, would be advisable.	Project reports, interviews
		timeliness	Has the project been delivered according to plan?	The timeframe proved to be too short as the project applied for an extension because delays in several project components and subsequent underspending.	
			Have delays affected project execution, costs and effectiveness, and if yes, how? what measures have been taken or bring the project as far as possible in achieving results? What recommendations can be derived from these experiences?	There have been several delays in finalising the memorandums of understanding with the pilot cities which were considered to be vital for the development of the LCMPs. This led to delays in project processes and underspending. For future activities a more pragmatic approach for the relationship with the partner city would be a sufficient basis for the cooperation and speed up the process. The delays in getting approval on project extension had a substantial impact on the final phase of the project.	Project reports, outputs, interviews

			Have there been complementarities and synergies between different subprojects under the umbrellas? If yes, how have they been leveraged? What are factors that favor these synergies? Has this resulted in benefits for UNEP beyond the scope of the umbrella projects?	There was no dedicated cooperation with other UNEP projects.	Project reports, outputs, interviews
F.	**Factors and processes affecting project performance**	**Preparation and readiness**	Were (sub/umbrella)project stakeholders adequately identified and were they sufficiently involved in project development ?	All the relevant stakeholders in India were identified and involved in the project development. A stakeholder workshop was organized in 2009 in cooperation with the Ministry of Environment to ensure that the project delivers on the National Action Plan on Climate Change and to seek endorsement from the national government. In a later stage the Ministry of Urban Development was involved. Umbrella project stakeholders were not directly involved.	Project reports, outputs, interviews
			Were the (sub/umbrella)-projects' objectives and components clear, practicable and feasible within their timeframe?	The creation of an enabling policy environment proved to be too broad and not feasible within the timeframe. Building capacity at the local level however, was a feasible objective and can be considered largely achieved.	Project reports, outputs, interviews
			To what extent were the project outputs / sub-projects logically interconnected and contributing to the same outcomes, intermediate states and impact?	LCMPs and national roadmaps contributed to the overarching goals.	Project reports, outputs, interviews
			Was it efficient and effective to close project 11/2-P2 and move its continuing sub-projects under project 11/2-P1?	N/A	Project reports, outputs, interviews

				Were the project documents (of sub-projects and umbrella projects) clear and realistic to enable effective and efficient implementation?	The project proposal and work plan are very basic documents, which only give limited guidance to efficient and effective implementation.	Project reports, outputs, interviews
				Were the capacities of executing agencies properly considered when the (sub-)projects were designed?	The project was well prepared with an excellent project team and reasonably well established links to local and national policy makers.	Project reports, outputs, interviews
				Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project implementation?	The division of labour between the project partners was clear and responsibilities with regard to clear pictures and deliverables well-defined.	Project reports, outputs, interviews
				Were counterpart resources (funding, staff, and facilities) and enabling legislation assured?	Yes	Project reports, outputs, interviews
				Were adequate project management arrangements in place?	Yes	Project reports, outputs, interviews
				Were lessons from other relevant projects properly incorporated in the project design?	The LCT project is not part of the strategic programs of UNEP's transport unit, which includes the Partnership for Clean Fuels and Vehicles (PCFV), the Global Fuel Economy Initiative (GFEI), the Share the Road project, Africa Sustainable Transport Forum (ASTF), The Global Clean Ports project and a new initiative on electric mobility. This made links between these programs and the LCT project slightly less strong, but the project team itself was very experienced and able to bring in substantial experience.	Project reports, outputs, interviews
				Were potentially negative environmental, economic and social impacts of projects identified?	Specific outputs on co-benefit opportunities and equity issues were developed by the project.	Project reports, outputs, interviews

			What factors influenced the quality-at-entry of the project design, choice of partners, allocation of financial resources etc.? Were any design weaknesses mentioned in the Project Review Committee minutes at the time of project approval adequately addressed?	The project design was somewhat driven by the funding agency and the expertise of the key partners namely, UNEP DTU, IIT and IIMA. No design weaknesses were mentioned.	Project reports, outputs, interviews
		Project implementation and management	To what extent have the project implementation mechanisms outlined in the ProDocs (or any design documents for the sub-projects) have been followed and were effective in delivering project milestones, outputs and outcomes. Were pertinent adaptations made to the approaches originally proposed?	The number of pilot cities changed (from 4 to 3). In lieu for the fourth city other outputs were delivered, e.g. scientific papers.	Interviews
			What was the role and performance of the teams and working groups established and the project execution arrangements at all levels? Was it effective and efficient for the project?	Generally the project team worked effectively, but there were a number of delays as described earlier.	Interviews and reports
			What were the advantages and disadvantages of having bundled different sub-projects together under an umbrella project from a management and supervision point of view.	N/A	Project reports, interviews
			What is the extent to which project management responded to direction and guidance provided by the steering bodies established for the different sub-projects.	The steering committee provided some advice in the early stages of the project.	Proposal and interviews

			What were operational and political / institutional problems and constraints that influenced the effective implementation of the projects, and how did project management overcome these problems?	The project has a strong technical focus and only paid little attention to political and institutional problems.	Project reports, interviews
		Stakeholder participation, cooperation and partnerships	How effective were mechanisms for sharing information and collaborating with other UNEP projects and programmes, external stakeholders and partners?	There was a reasonable level of outreach to other projects and stakeholders. However, there could have been a stronger focus on outreach and knowledge sharing.	Project reports, interviews
			What approach(es) and mechanisms were used to identify and engage stakeholders in various stages of the projects? What were the strengths and weaknesses of these approaches with respect to the project objectives and the stakeholders' motivations and capacities?	Stakeholder engagement was an important activity in the project particularly in the LCMP development component.	Project reports, interviews
			Have the (sub-)projects made full use of opportunities for collaboration with other (sub-)projects and programs including opportunities not mentioned in the Project Documents? Have complementarities been sought, synergies been optimized and duplications avoided between the sub-projects and with other projects?	Regional networks such as Clean Air Asia, ICLEI and UN-Habitat could have been more actively engaged.	Interviews

				What was the achieved degree and effectiveness of collaboration and interactions between the various project partners and stakeholders during design and implementation of the project?	Relevant stakeholders were aware of the project, but have not always been actively engaged.	Interviews
				To what extent have the projects been able to take up opportunities for joint activities, pooling of resources and mutual learning with other organizations and networks?	So far they have been minimal joint activities with other projects, such as dissemination activities of the share the Road project LCT final workshop.	Outputs and reports
				How did the relationship between the projects and the collaborating partners (institutions and individual experts) develop? Which benefits stemmed from their involvement for project performance, for UNEP and for the stakeholders and partners themselves? Do the results of the projects promote participation of stakeholders, including users, in environmental decision making?	The project consortium continues to work well and there were no obvious collaboration issues during the course of the project.	Outputs
				How effective were the public awareness activities that were undertaken during the course of implementation of the (sub-)projects to communicate the projects' objective, progress, outcomes and lessons? This should be disaggregated for the main stakeholder groups identified in the inception report.	The primary target audience were government officials at local and national level, but the LCMP development process included dedicated public consultation components.	Outputs and reports
				Did the projects identify and make use of existing communication channels and networks used by key stakeholders? Did the projects provide feedback channels?	The project identified many major stakeholders including the key government institutions at national and local level. Further outreach to civil society organizations and city-networks would be advisable.	Outputs and reports

			Was there learning across the umbrella projects that led to improved subproject and component design and more effective projects?	No	Outputs and reports
		Country ownership and driven-ness.	How were partner countries selected? What criteria were used and were they appropriate?	India is the second largest emerging economy in the world and was considered to be a priority country from the funding agency.	Outputs
			To what extent have Governments assumed responsibility for the (sub-)projects and provided adequate support to project execution, including the degree of cooperation received from the various public institutions involved in the projects?	Close cooperation with the Ministry of Urban Development and other national stakeholders has contributed to awareness at the national level of the key pressing issues with regard to low carbon transport development, but the link to actual national policy change is yet to be made. At the local level the Low Carbon Mobility Plans, their development and stakeholder engagement processes, as well as the recommendations has created a high level of awareness in the participating three cities. There was little opportunity to contribute directly to local action under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). This was out of the projects influence is and was largely influenced by political change at the union level. With the smart cities mission another opportunity arose to integrate LCMP policy recommendations into local (pilot) actions.	Outputs, project reports, interviews

			How and how well did the projects stimulate country ownership of project outputs and outcomes?	In the three cities surveyed there has been good knowledge of the LCMPs and it's main objectives and content, even among staff not directly involved in the development of the plans. There has been a certain level of ownership, even though the plans have been considered to be a product of the project and not of the city.	Outputs
		Financial planning and management	Verify the application of proper standards (clarity, transparency, audit etc.) and timeliness of financial planning, management and reporting to ensure that sufficient and timely financial resources were available to the project and its partners	Generally, the financial management was well handled. Financial constraints became an issue when an anticipated (budget neutral) project extension was not approved for almost one year by the funding agency (BMUB). This created some challenges for the project to continue operation without spending until the extension was being approved.	Outputs, project reports, interviews
			Assess other administrative processes such as recruitment of staff, procurement of goods and services (including consultants), preparation and negotiation of cooperation agreements etc. to the extent that these might have influenced project performance	The core consortium consists of permanent staff at the main partner institutions. Supporting consultants in Udaipur and Vizak were known to the local implementation partners. The underspending did not come as a sudden surprise and resource utilization could have been adjusted to use the resources within the given time. However, in general resource utilization was very cost-effective. Considering the underspending issue no additional resources mobilization was required to deliver on the project objectives, but for upscaling a certain level of outreach to potential funding agencies has been carried out without clear results yet.	Outputs, project reports, interviews

			Has financing materialized as expected / planned, and if not, why not?	Yes. Funding by the German Ministry for the environment (BMUB) was secured at the beginning of the project.	Outputs, project reports, interviews
		Supervision, guidance and technical backstopping	Was effective supervision provided that verified the quality and timeliness of project execution in terms of finances, administration and achievement of outputs and outcomes, in order to identify and recommend ways to deal with problems which arise during project execution?	Management arrangements were appropriate. The project was jointly managed by UNEP and UNEP DTU, who had a close link to the local implementation partners. Backstopping was not required during the project as sufficient expertise and capacities were available in the project consortium.	Outputs, project reports, interviews
		Monitoring and evaluation	Were the M&E arrangements designed adequate and following UNEP policies and procedures?	The data collection focused almost exclusively on the scenario development. As the LCT project was aiming to inform long-term policy change no immediate impacts were considered to have occurred during the project's lifetime. Hence, no monitoring and evaluation arrangements were made.	Proposal, report
			- Budgeting and funding for M&E activities: Determine whether support for M&E was budgeted adequately and was funded in a timely fashion during implementation.	No time for evaluation activities has been allocated.	Reports, outputs, interviews
			To what extent did the projects engage key stakeholders in the design and implementation of monitoring? Which stakeholders (from groups identified in the inception report) were involved? If any stakeholders were excluded, what was the reason for this?	Stakeholders were only involved in the development of project outputs not in monitoring activities.	Reports, outputs, interviews

				Did the projects appropriately plan to monitor risks associated with environmental, economic and social safeguards?	There was one specific deliverable social, environmental and economic co-benefits. Beyond that no specific safeguards were planned for.	Reports, outputs, interviews
				Arrangements for evaluation: Has the desired level of achievement (targets) been specified for all indicators of objectives and outcomes? Were there adequate provisions in the legal instruments binding project partners to fully collaborate in evaluations?	Beyond the delivery of the outputs no specific evaluation arrangement was in place.	Reports, outputs, interviews
				M&E Plan Implementation	The majority of the project outputs were only delivered in the last phase of the project, leaving little time for evaluation within the project's lifetime.	Proposal, reports, outputs, interviews
				Was the logical framework used as a planning and monitoring instrument?	All the key elements of the theory of change feature somehow in the project documentation starting from the actual project outputs to the outcomes and the policy and infrastructure changes the project	Proposal, reports, outputs, interviews
				To what extent has baseline information on performance indicators been collected and presented in a clear manner? Was the methodology for the baseline data collection explicit and reliable?	With the large number of scenarios, all of which include a baseline, there is a substantive body of indicators, but the link to the suggested policies and infrastructure is slightly less substantial and the link to the direct output of the project is largely missing.	Proposal, reports, outputs, interviews

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6.3   List of individuals consulted for the case study

1.   Kamala Ernest, Programme Officer, UNEP

2.   Ro de Jong, Head, Transport Unit, UNEP

3.   Subash Dhar, Senior Economist, UNEP DTU Partnership

4.   Shobakar Dhakal, Associate Professor, Asian Institute of Technology, Thailand

5.   Geetam Tiwari, Professor, Indian Institute of Technology Delhi (IITD)

6.   Darshini Mahadevia, CEPT University

7.   Parthaa Bosu, India Director and South Asia Liaison, Clean Air Asia

8.   Jorge Rogat, Project Manager, UNEP

9.   Jonas Bleckmann, Climate Expert, Programme Office International Climate Initiative

10. P.R. Shukla, Professor, Indian Institute of Management Ahmedabad

11. Ashish Rao Ghorpare, Regional Executive Director ICLEI South Asia

12. Talat Munshi, Associate Professor, CEPT

13. Akshima T. Ghate, Fellow, TERI

14. Anvita Arora, local consultant Vizag

15. Pravin Kumar, Commissioner of Vizag

16. R.P. Sharma, Ex Secretary, Urban Improvement Trust (UIT)

17. Himmat Singh Barath, Commissioner, Udaipur Municipal Corporation

18. Manna Lal Rawat, Regional Transport Officer, Udaipur

6.4   List of documents consulted for the case study

1.   Transport Scenarios for India: Harmonising Development and Climate Benefits

2.   Biofuel Roadmap for India NOVEMBER 2015 Transport Scenarios for India: Harmonising Development and Climate Benefits

3.   Transport Scenarios for India: Harmonising Development and Climate Benefits NOVEMBER 2015 LCT Project Resource Catalogue

4. Promoting Low Carbon Transport in India Project Resource Catalogue NOVEMBER 2015 LCT Project Booklet

5. Promoting Low Carbon Transport in India Project Booklet NOVEMBER 2015 Scenarios and Roadmap for Intercity Transport in India: The Role of High Speed Rail

6. Scenarios and Roadmap for Intercity Transport in India: The Role of High Speed Rail OCTOBER 2015

7. Special Issue: Energy Policies for Low Carbon Sustainable Transport in Asia JUNE 2015

8. Low-Carbon Comprehensive Mobility Plan: Udaipur JANUARY 2015

9. Low-Carbon Comprehensive Mobility Plan: Vishakhapatinam NOVEMBER 2014

10. Electric Vehicle Scenarios and a Roadmap for India NOVEMBER 2014

11. Preparing a Comprehensive Mobility Plan (CMP) - A Toolkit (Revised) SEPTEMBER 2014

12. Assessment of Motor Vehicle Use Characteristics in Three Indian Cities JUNE 2014

13. Case Study of Metro Rails in Indian Cities JUNE 2014

14. Second-Generation Biofuel Potential in India: Sustainability and Cost Considerations JUNE 2014

15. Low-Carbon Comprehensive Mobility Plan: Rajkot APRIL 2014

16. A Guidebook on Low Carbon City Planning in India AUGUST, 2013

17. Impact Assessment and Management Framework for Infrastructure Assets: A Case of Konkan Railways AUGUST, 2013

18. NMT Investments in India: Policy, Investments and Design, August 2013 AUGUST, 2013

19. Bus Rapid Transit (BRT) Case Studies in India - Low-Carbon Mobility in India and the Challenges of Social Inclusion: [Policy Summary] [Complete Report] JANUARY, 2013

20. Low-carbon Comprehensive Mobility Plan for Udaipur: Sustainable Mobility with lower Emissions NOVEMBER, 2013

21. Low-carbon Comprehensive Mobility Plan for Rajkot: Sustainable Mobility with lower Emissions NOVEMBER, 2013

22. Promoting Low Carbon Transport in India – Updated Project Brochure NOVEMBER, 2012

23. Methodology for Developing Low Carbon Mobility Plans OCTOBER, 2012

24. Overview of International Climate Funds for Urban Transport OCTOBER, 2012

25. Infrastructure for Low-Carbon Transport in India: A Case Study of the Delhi-Mumbai Dedicated Freight Corridor - Complete Report [Policy Summary] [Complete Report] AUGUST, 2012

26. Macro Considerations for LCMPs OCTOBER, 2012

27. Climate Finance for possibilities for post 2012 - Global Perspective OCTOBER, 2012

28. Sustainable Urban Transport Project (SUTP) - Focus on Capacity Building OCTOBER, 2012

29. Experiences sharing in CMP preparation OCTOBER, 2012

30. Sustainable Mobility Plans for Cities APRIL, 2012

31. Data Collection Methodology and Sampling Issues APRIL, 2012

32. Measuring Inclusiveness APRIL, 2012

33. Urban Air Quality and Sustainable Transport: Issues,Instruments and Strategies APRIL, 2012

34. Measurement of Air Quality Indicators APRIL, 2012

35. Data Indicators for Low carbon Mobility APRIL, 2012

36. Methodology for Public Transport Demand Estimation MARCH, 2012

37. Inputs for modelling Bicycles Travel Demand MARCH, 2012

38. Electric Mobility Strategy for Low Carbon Transport MARCH, 2012

39. Sustainable Mobility Approaches for Low Carbon Development: Implications for Energy Demand and CO2 Emissions MARCH, 2012

40. Prioritization of Technologies/Infrastructure using Multi Criteria Analysis MARCH, 2012

41. Adaptation Framework for Large Infrastructures FEBRUARY, 2012

42. Macro Indicators for Low Carbon Transport in India OCTOBER, 2011

43. City Level Indicators: Promoting Low Carbon Transport in Indian Cities OCTOBER, 2011

44. Putting Urban Transport Sector on a Low Energy and Low Carbon Path OCTOBER, 2011

45. Metro Systems in India: Case Study of the Delhi Metro Rail Corporation (DMRC) OCTOBER, 2011

46. Bus Rapid Transit (BRT) Projects in Indian Cities as Inclusive Transport Systems OCTOBER, 2011

47. Macro Considerations for Urban Low Carbon Mobility OCTOBER, 2011

48. Methodology for Preparing Low Carbon Mobility Plans OCTOBER, 2011

49. Indicators for Inclusiveness in Transport OCTOBER, 2011

50. City Level Indicators OCTOBER, 2011

51. Infrastructure and Low Carbon Transport: Delhi-Mumbai Freight Corridor (DMFC) Case Study OCTOBER, 2011

52. Macro Indicators of Sustainable Low Carbon Transport OCTOBER, 2011

53. Integrated Assessment of Low Carbon Transport at National Level OCTOBER, 2011

54. Germany's International Climate Initiative (ICI) OCTOBER, 2011

55. United Nations Environment Programme (UNEP) Transport Programme and Project Overview OCTOBER, 2011

56. Expert Workshop on Indicators for Sustainable Transport AUGUST, 2011

57. TNA Guidebook Series: Technologies for Climate Change Mitigation in the Transport Sector MARCH, 2011

58. Project Inception workshop report NOVEMBER, 2010

59. Promoting Low-carbon Transport in India Factsheet NOVEMBER, 2010

60. Defining Low Carbon Transport in India: Proceedings of the workshop held at the India Habitat Centre, New Delhi FEBRUARY, 2010

61. Germany's "International Climate Initiative" and the Challenge of Transport 2010

62. Low Carbon Transport: The Context 2010

63. UNEP's Programme on Climate Change and Transport 2010

64. Introduction to the project "Promoting Low Carbon Transport" 2010

65. Sustainability Indicators for Transport 2010

66. Transport and Inclusiveness 2010

67. Low Carbon Mobility Plans for Cities 2010

68. Public awareness-raising – Bi-annual Project Newsletter (10/2011) www.unep.org/transport/lowcarbon/newsletter/newsletter.asp, Project Website: www.unep.org/transport/lowcarbon, New Project Brochure (12/2011) www.unep.org/transport/lowcarbon/PDFs/Promoting_Low_Carbon_Transport_in_India_Project_Brochure.pdf

69. Presentation on 29.08.2012 in Ahmedabad, India on Sustainability Indicators www.unep.org/transport/lowcarbon/MacroIndicator.asp

70. New Delhi, India presentation on 18 – 20.10.2011 on developing a "National Strategy for Promoting Low-Carbon Transport in India" and focusing on "Developing Low-Carbon Urban Mobility Plans for Indian Cities" www.unep.org/transport/lowcarbon/stakeholdersworkshop.asp

71. 17th Asia-Pacific Integrated Model (AIM) International Workshop in Tsukuba, Japan, 17-19.02.2012, "Low Carbon Society in Asia: Activities in India" Prof. P. R. Shukla, IIM, Ahmedabad

72. Side event on Low Carbon Society in Asia: from Planning to Implementation, South Africa, 02.12.2011, "Implementing Low Carbon Strategy (LCS) Options: Transport Sector in India", Prof. P. R. Shukla, IIM, Ahmedabad

73. Transition towards low carbon societies in a changing world Side Event, South Africa, 29.11.2011, "Choosing between Low or High Carbon Intensive Development Patterns: What is the Rationale?", Prof. P. R. Shukla, IIM, Ahmedabad

74. International Research Network for Low Carbon Societies, Paris, 14.10.2011, "Urban Dynamics, Mobility and Consumption Styles: The Rationale for "Leapfrogging" in Developing and Emerging Countries, Prof. P. R. Shukla, IIM, Ahmedabad

75. Clean and Sustainable Mobility for All: An Agenda for Reforms, New Dehli, 28-29.09.2011, "Preliminary Assessment of Bus Rapid Transit Systems in Urban India", Prof. Darshini Mahadevia, Prof. Rutul Joshi and Abhijit Datey, CEPT University

76. Sub Regional Environmental Sustainable Transport Training Workshop and Policy Dialogue in South Asia, Ahmedabad, India, 26-28.08.2011, "Transport Equity", Prof. Darshini Mahadevia, CEPT University

6.5 Quality Assessment of the Evaluation Report

Evaluation Title:

Low Carbon Transport (case study for umbrella project 1,2/3 P1&P2)
By Oliver Lah

All UNEP evaluations are subject to a quality assessment by the Evaluation Office. The quality assessment is used as a tool for providing structured feedback to the evaluation consultants.

The quality of both the draft and final <u>evaluation report</u> is assessed and rated against the following criteria:

		UNEP Evaluation Office Comments	Draft Report Rating	Final Report Rating
Substantive report quality criteria				
A.	**Quality of the Executive Summary**: Does the executive summary present the main findings of the report for each evaluation criterion and a good summary of recommendations and lessons learned? (Executive Summary not required for zero draft)	Draft report: Incomplete Exec Summary Final report: Revised to cover all elements	2	5
B.	**Project context and project description**: Does the report present an up-to-date description of the socio-economic, political, institutional and environmental context of the project, including the issues that the project is trying to address, their root causes and consequences on the environment and human well-being? Are any changes since the time of project design highlighted? Is all essential information about the project clearly presented in the report (objectives, target groups, institutional arrangements, budget, changes in design since approval etc.)?	Draft report: Content mixed and gaps identified Final report: Section revised	2	5
C.	**Strategic relevance**: Does the report present a well-reasoned, complete and evidence-based assessment of strategic relevance of the intervention in terms of relevance of the project to global, regional and national environmental issues and needs, and UNEP strategies and programmes?	Draft report: Lacked reference to stakeholder needs. Final report: Section revised	4	5
D.	**Achievement of outputs**: Does the report present a well-reasoned, complete and evidence-based assessment of outputs delivered by the intervention (including their quality)?	Draft report: Final report:	4	5
E.	**Presentation of Theory of Change**: Is the Theory of Change of the intervention clearly presented? Are causal pathways logical and complete (including drivers, assumptions and key	Draft report: Lacked discussion of assumptions and drivers Final report: Discussion not expanded.	3	3

	actors)?			
F.	**Effectiveness - Attainment of project objectives and results**: Does the report present a well-reasoned, complete and evidence-based assessment of the achievement of the relevant outcomes and project objectives?	Draft report: Final report:	4	4
G.	**Sustainability and replication**: Does the report present a well-reasoned and evidence-based assessment of sustainability of outcomes and replication / catalytic effects?	Draft report: Not all elements of sustainability covered. Final report:	3	3
H.	**Efficiency**: Does the report present a well-reasoned, complete and evidence-based assessment of efficiency? Does the report present any comparison with similar interventions?	Draft report: Cost savings etc not discussed. Final report: Section revised	3	4
I.	**Factors affecting project performance**: Does the report present a well-reasoned, complete and evidence-based assessment of all factors affecting project performance? In particular, does the report include the actual project costs (total and per activity) and actual co-financing used; and an assessment of the quality of the project M&E system and its use for project management?	Draft report: Headings required under Factors Affecting Project Performance not discussed. Final report: Section revised and substantially expanded.	1	4
J.	**Quality of the conclusions:** Do the conclusions highlight the main strengths and weaknesses of the project, and connect those in a compelling story line?	Draft report: Table of ratings provided instead of conclusions Final report:	N/A	4
K.	**Quality and utility of the recommendations**: Are recommendations based on explicit evaluation findings? Do recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?)'. Can they be implemented?	Draft report: Lessons not spelt out. Final report:	3	4
L.	**Quality and utility of the lessons**: Are lessons based on explicit evaluation findings? Do they suggest prescriptive action? Do they specify in which contexts they are applicable?	Draft report: Recommendations not spelt out. Final report:	3	4
Report structure quality criteria				
M.	**Structure and clarity of the report**: Does the report structure follow EO guidelines? Are all requested Annexes included?	Draft report: Final report:	1	5
N.	**Evaluation methods and information sources**: Are evaluation methods and information sources clearly described? Are data collection methods, the triangulation / verification approach,	Draft report: No section on evaluation approach. Final report: Evaluation approach covered generally in different sections but not made explicit.	1	2

	details of stakeholder consultations provided? Are the limitations of evaluation methods and information sources described?			
O.	**Quality of writing**: Was the report well written? (clear English language and grammar)	Draft report: Final report:	2	6
P.	**Report formatting**: Does the report follow EO guidelines using headings, numbered paragraphs etc.	Draft report: Final report:	3	6
		OVERALL REPORT QUALITY RATING	**2.6**	**4.9**

The quality of the <u>evaluation process</u> is assessed at the end of the evaluation and rated against the following criteria:

		UNEP Evaluation Office Comments		Rating
Evaluation process quality criteria				
Q.	**Preparation:** Was the evaluation budget agreed and approved by the EO? Was inception report delivered and approved prior to commencing any travel?			6
R.	**Timeliness:** Was a TE initiated within the period of six months before or after project completion? Was an MTE initiated within a six month period prior to the project's mid-point? Were all deadlines set in the ToR respected?			6
S.	**Project's support:** Did the project make available all required documents? Was adequate support provided to the evaluator(s) in planning and conducting evaluation missions?			6
T.	**Recommendations:** Was an implementation plan for the evaluation recommendations prepared? Was the implementation plan adequately communicated to the project?			N/A
U.	**Quality assurance:** Was the evaluation peer-reviewed? Was the quality of the draft report checked by the evaluation manager and peer reviewer prior to dissemination to stakeholders for comments? Did EO complete an assessment of the quality of the final report?			5
V.	**Transparency:** Were the draft ToR and evaluation report circulated to all key stakeholders for comments? Was the draft evaluation report sent directly to EO? Were all comments to the draft evaluation report sent directly to the EO and did EO share all comments with the commentators? Did the evaluator(s)			5

	prepare a response to all comments?			
W.	**Participatory approach:** Was close communication to the EO and project maintained throughout the evaluation? Were evaluation findings, lessons and recommendations adequately communicated?			5
X.	**Independence:** Was the final selection of the evaluator(s) made by EO? Were possible conflicts of interest of the selected evaluator(s) appraised?			6
	OVERALL PROCESS RATING			**5.6**

Rating system for quality of evaluation reports

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1

The overall quality of the evaluation report is calculated by taking the mean score of all rated quality criteria.