IKI Projektevaluierungsbericht Nr. P 003N

Nachevaluierung

Promoting Low Carbon Transport in India

Nachevaluiert durch Tilman Welte, Gutachter, im Auftrag der GFA Consulting Group GmbH

Eine Nachevaluierung des vorliegenden Projektes war notwendig, da der Evaluierungsbericht nicht den Vorgaben der Methodologie der IKI für Einzelprojektevaluierungen entsprach. Die Anwendung der gleichen Methodologie soll die Vergleichbarkeit der IKI-Einzelprojektevaluierungsberichte für die Erstellung übergeordneter Auswertungen wie Syntheseauswertungen.

Oliver Lah (2016) “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 on behalf of the Evaluation Office of UNEP. September 2016.

Die in dem IKI-Projektevaluierungsbericht vertretenen Auffassungen sind die Meinung des unabhängigen Gutachters und entsprechen nicht notwendigerweise der des BMU, der ZUG gGmbH, des Programmbüros der IKI oder der GFA Consulting Group GmbH.

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SUMMARY

Project number		**10_I_129_IND_M_Low Carbon Transport**	
Project name		**Promoting Low Carbon Transport in India**	
Country of implementation		**India**	
Implementing agency	UNEP	**Project partner**	UNEP - UNEP Risoe Centre Denmark - Indian Institute of Management, Ahmedabad - Indian Institute of Technology, Delhi - CEPT University, Ahmedabad
Project start ***planned*** ***real***	 01-08-2010 20-10-2010	**Project end** ***Planned*** ***real***	 01-08-2013 31-12-2015
Project IKI budget[1] ***planned*** ***real***	 1,955,857.11 1,689,286.04	**Project budget from non-IKI sources** ***planned*** ***real***	 530,000.00 438,573.08

Project description

The project "***Promoting Low Carbon Transport in India***" has been implemented by UNEP Risoe Centre Denmark in collaboration with the Indian Institute of Management (Ahmedabad), the Indian Institute of Technology (Delhi) and the CEPT University (Ahmedabad). The core problem for which the project aimed to find solutions were high GHG emissions as a result of unsustainable transport systems, increasingly based on private, individual vehicle use, further aggravated by a rising economy and rising middle class. The overriding goal of the project was to create an ***enabling environment*** for building ***sustainable transport systems,*** which would help in reducing the climate risks through ***mitigation*** within the transport sector and by ***building adaptation capacity*** *of key target groups within the transport sector.* The intervention strategy was based on information provision, methodology development, (soft) technology transfer and capacity building. The project followed a multi-stakeholder approach including cities, industry associations, financial agencies, and different Ministries of Government of India. Target groups of the project were policy makers, project developers, technology providers, financial providers and transport users. Main achievements of the project comprised the elaboration of a methodology for low carbon transport planning and the development of three low carbon mobility plans. The project contributed as well to policy making and decisions through a comprehensive set of (academic) papers and publications. The implementation period comprised four years and three months between 20th of October 2010 and 31st of December 2015. The overall budget comprised € 2,485,857.11 and finally € 2,127,859.12 have been spent. The contribution of the BMU was € 1,689,286.04 and the remaining budget was provided by UNEP.

Evaluation findings

The project was **highly relevant** but the selected approach could not fully develop its potential mainly due to the fact that project outputs were rather geared towards the scientific community rather than policy makers and advisors as the main target group.

The defined **project goals** could only be achieved for the aspect of capacity building. The objective to generate an enabling environment for the creation of sustainable transport systems could not be achieved. The project provided however valuable contributions to this goal through the development of a corresponding methodology and three low carbon mobility plans with a sound potential for replication.

The project can be qualified as **efficient** in view of spent resources and the high potential for climate change mitigation on the basis of the project achievements. The project registered however important delays due to an insufficient pragmatic approach and an initially technically insufficient demand for an extension, which was submitted very late. This has triggered a dormant

[1] Final Report – Financial Report, 27.06.2016

period for more than a year in which important opportunities for replication and upscaling were missed.

The positive **impact** of the project is related to an improved adaptation capacity to climate change through a variety of capacity building measures at local and national level. Mitigation of climate change through a reduction of GHG emissions could not be achieved, but the project provided a sound basis to achieve a reduction of such emissions in the future. This is mainly related to the development of a methodology of low carbon mobility planning and the development of three low carbon mobility plans in mid-sized cities with a high potential for replication.

Sustainability is given for the project with regard to the capacity building measures. The capacity building creates the basis to continue with and further expand the issue of low carbon mobility planning. It is however not clear whether the plans, developed by the project have been or will be implemented. No evidence could be found whether Indian institutions made the effort to finance and / or implement the developed low carbon mobility plans.

Coherence, complementarity and coordination is only partly given with regard to internal coordination between the project and stakeholders. Evidence for synergies and complementary action with similar projects and / or with appropriate other development agencies could not be found.

Project planning and steering showed important limitations. The planning document contains a good and comprehensive description of the framework conditions and provides a sound problem analysis. The resulting target system was however inadequate and did not fulfil the necessary conditions of a theory of change or a logical framework. In particular the link between outputs, outcomes and impact was not sufficiently developed and the indicators were insufficiently defined in order to be verified and to be used for the assessment of outcomes and impact. The steering during implementation was good in as far as all planned outputs have been developed in good quality. The project duration however was too short to achieve the overall goal of the creation of an enabling environment for sustainable transport systems and the delays in project implementation led to missed opportunities for upscaling and replication.

Lessons learned and recommendations

With regard to lessons learned, it is recommended to pay firstly more attention to the link between outputs, outcomes and intended impact. In this respect, proper intervention logics and sound theories of change should be a pre-condition for any project approval.

Secondly, the transport sector in India has a high potential for the reduction of GHG emissions. The potential can only be realized if the plans for low carbon mobility are implemented. Projects that aim to mitigate climate change through GHG emission reduction which require substantial investments should establish therefore from the beginning partnerships with funding institutions which have the potential to fund the necessary investments.

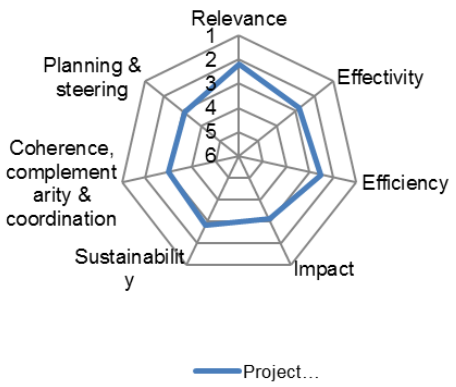

Figure 1: spider diagram – evaluation results

ZUSAMMENFASSUNG

Projektnummer		**10_I_129_IND_M_Low Carbon Transport**	
Name des Projekts		**Förderung des kohlenstoffarmen Verkehrs in In-**	
Land der Durchführung		**Indien**	
Durchführungsstelle	UNEP	**Projektpartner**	UNEP - UNEP Risoe Centre Denmark - Indian Institute of Management, Ahmedabad - Indian Institute of Technology, Delhi - CEPT University, Ahmedabad
Projektstart ***geplant*** ***real***	 01-08-2010 20-10-2010	**Ende des Projekts** ***geplant*** ***real***	 01-08-2013 31-12-2015
Projekt IKI-Haushalt[1] ***geplant*** ***real***	 1,955,857.11 1,689,286.04	**Projektbudget aus nicht-IKI Quellen** ***geplant*** ***real***	 530,000.00 438,573.08

Beschreibung des Projekts

Das Projekt "***Promoting Low Carbon Transport in India***" wurde vom UNEP Risoe Centre Denmark in Zusammenarbeit mit dem Indian Institute of Management (Ahmedabad), dem Indian Institute of Technology (Delhi) und der CEPT University (Ahmedabad) durchgeführt. Das Kernproblem, für das im Rahmen des Projekts Lösungen gefunden werden sollten, waren die hohen Treibhausgasemissionen als Folge nicht nachhaltiger Verkehrssysteme, die sich zunehmend auf die Nutzung privater, individueller Fahrzeuge stützen, was durch eine steigende Wirtschaft und eine wachsende Mittelschicht noch verschärft wird. Das übergeordnete Ziel des Projekts bestand darin, ein ***günstiges Umfeld*** für den Aufbau ***nachhaltiger Verkehrssysteme zu*** schaffen***,*** das zur Verringerung der Klimarisiken durch ***Abschwächung*** innerhalb des Verkehrssektors und durch den ***Aufbau von Anpassungskapazitäten*** *bei wichtigen Zielgruppen innerhalb des Verkehrssektors* beitragen würde. Die Interventionsstrategie basierte auf der Bereitstellung von Informationen, der Entwicklung von Methoden, dem (sanften) Technologietransfer und dem Aufbau von Kapazitäten. Das Projekt verfolgte einen Multi-Stakeholder-Ansatz, an dem Städte, Industrieverbände, Finanzagenturen und verschiedene Ministerien der indischen Regierung beteiligt waren. Die Zielgruppen des Projekts waren politische Entscheidungsträger, Projektentwickler, Technologieanbieter, Finanzdienstleister und Verkehrsnutzer. Zu den wichtigsten Errungenschaften des Projekts gehörten die Ausarbeitung einer Methodik für eine kohlenstoffarme Verkehrsplanung und die Entwicklung von drei kohlenstoffarmen Mobilitätsplänen. Das Projekt leistete auch einen Beitrag zur Politikgestaltung und zu Entscheidungen durch eine umfassende Reihe von (akademischen) Veröffentlichungen. Der Durchführungszeitraum umfasste vier Jahre und drei Monate zwischen dem 20. Oktober 2010 und dem 31. Dezember 2015. Das Gesamtbudget betrug 2.485.857,11 €, wovon letztendlich 2.127.859,12 € ausgegeben wurden. Der Beitrag des BMU betrug 1.689.286,04 €, das restliche Budget wurde von UNEP bereitgestellt.

Ergebnisse der Evaluierung

[1] Abschlussbericht - Finanzbericht, 27.06.2016

Das Projekt war **hochgradig relevant**, aber der gewählte Ansatz konnte sein Potenzial nicht voll entfalten, was vor allem daran lag, dass die Projektergebnisse eher auf die wissenschaftliche Gemeinschaft als auf politische Entscheidungsträger und Berater als Hauptzielgruppe ausgerichtet waren.
Die definierten **Projektziele** konnten nur in Bezug auf den Aspekt des Kapazitätsaufbaus erreicht werden. Das Ziel, ein günstiges Umfeld für die Schaffung nachhaltiger Verkehrssysteme zu schaffen, konnte nicht erreicht werden. Das Projekt lieferte jedoch wertvolle Beiträge zu diesem Ziel durch die Entwicklung einer entsprechenden Methodik und dreier kohlenstoffarmer Mobilitätspläne, die ein solides Potenzial zur Replikation aufweisen.
Das Projekt kann angesichts der aufgewendeten Mittel und des hohen Potenzials für den Klimaschutz auf der Grundlage der Projektergebnisse als **effizient** bezeichnet werden. Das Projekt verzeichnete jedoch erhebliche Verzögerungen aufgrund eines unzureichenden pragmatischen Ansatzes und eines zunächst technisch unzureichenden Verlängerungsantrags, der sehr spät eingereicht wurde. Dies hat eine Ruhephase von über einem Jahr ausgelöst.
Währenddessen wurden wichtige Gelegenheiten für die Vervielfältigung und das Upscaling verpasst.
Die positiven **Auswirkungen** des Projekts stehen im Zusammenhang mit einer verbesserten Anpassungsfähigkeit an den Klimawandel durch eine Vielzahl von Maßnahmen zum Aufbau von Kapazitäten auf lokaler und nationaler Ebene. Die Abschwächung des Klimawandels durch eine Verringerung der Treibhausgasemissionen konnte nicht erreicht werden, aber das Projekt lieferte eine solide Grundlage, um eine Verringerung dieser Emissionen in der Zukunft zu erreichen. Dies hängt vor allem mit der Entwicklung einer Methodik für eine kohlenstoffarme Mobilitätsplanung und der Entwicklung von drei kohlenstoffarmen Mobilitätsplänen in mittelgroßen Städten zusammen, die ein hohes Potenzial zur Nachahmung aufweisen.
Die Nachhaltigkeit des Projekts ist im Hinblick auf die Maßnahmen zum Kapazitätsaufbau gegeben. Der Kapazitätsaufbau schafft die Grundlage, um das Thema kohlenstoffarme Mobilitätsplanung fortzuführen und weiter auszubauen. Es ist jedoch nicht klar, ob die im Rahmen des Projekts entwickelten Pläne umgesetzt wurden oder werden. Es konnten keine Belege dafür gefunden werden, ob indische Institutionen sich um die Finanzierung und / oder Umsetzung der entwickelten kohlenstoffarmen Mobilitätspläne bemühen.
Kohärenz, Komplementarität und Koordinierung sind im Hinblick auf die interne Koordinierung zwischen dem Projekt und den Beteiligten nur teilweise gegeben. Hinweise auf Synergien und komplementäre Maßnahmen mit ähnlichen Projekten und/oder mit geeigneten anderen Entwicklungsagenturen konnten nicht gefunden werden.
Die Projektplanung und -steuerung wies erhebliche Einschränkungen auf. Das Planungsdokument enthält eine gute und umfassende Beschreibung der Rahmenbedingungen und liefert eine fundierte Problemanalyse. Das daraus resultierende Zielsystem war jedoch unzureichend und erfüllte nicht die notwendigen Bedingungen einer Theorie der Veränderung oder eines logischen Rahmens. Insbesondere war die Verbindung zwischen Outputs, Ergebnissen und Auswirkungen nicht ausreichend entwickelt und die Indikatoren waren nicht ausreichend definiert, um überprüft und für die Bewertung der Ergebnisse und Auswirkungen verwendet werden zu können. Die Steuerung während der Durchführung war insofern gut, als alle geplanten Ergebnisse in guter Qualität entwickelt wurden. Die Projektlaufzeit war jedoch zu kurz, um das Gesamtziel der Schaffung eines günstigen Umfelds für nachhaltige Verkehrssysteme zu erreichen, und die Verzögerungen bei der Projektdurchführung führten zu verpassten Gelegenheiten für ein Upscaling und eine Replikation.

Lessons learned und Empfehlungen

Im Hinblick auf die gewonnenen Erkenntnisse wird empfohlen, erstens dem Zusammenhang zwischen Outputs, Ergebnissen und beabsichtigten Auswirkungen mehr Aufmerksamkeit zu widmen. In dieser Hinsicht sollten eine angemessene Interventionslogik und solide Theorien des Wandels eine Vorbedingung für jede Projektgenehmigung sein.

Zweitens hat der Verkehrssektor in Indien ein hohes Potenzial für die Verringerung der Treibhausgasemissionen. Dieses Potenzial kann nur ausgeschöpft werden, wenn die Pläne für eine kohlenstoffarme Mobilität umgesetzt werden. Projekte, die darauf abzielen, den Klimawandel durch die Reduzierung von THG-Emissionen abzuschwächen, und die erheblichen Investitionen erfordern, sollten daher von Anfang an Partnerschaften mit Finanzierungsinstitutionen eingehen, die das Potenzial haben, die notwendigen Investitionen zu finanzieren.

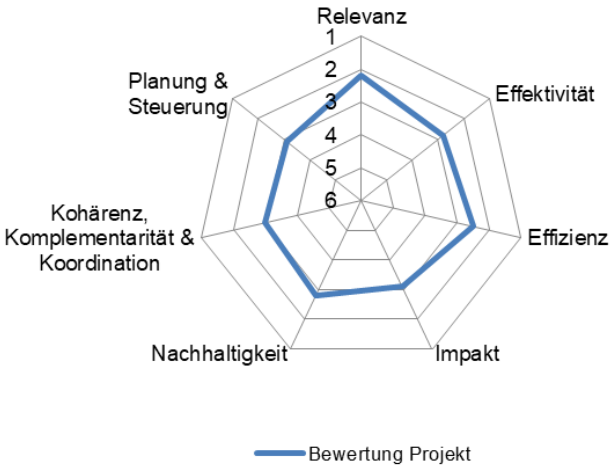

Abbildung 1 Spinnendiagramm - Evaluierungsergebnisse

1 PROJECT BRIEF

The project "***Promoting Low Carbon Transport in India***" has been implemented by UNEP Risoe Centre Denmark in collaboration with the Indian Institute of Management (Ahmedabad), the Indian Institute of Technology (Delhi) and the CEPT University (Ahmedabad) in the frame of the International Climate Initiative, funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The implementation period lasted from 20th of October 2010 until 31st of December 2015. The overriding goal of the project was to create an ***enabling environment*** for building ***sustainable transport systems,*** which would help in reducing the climate risks through ***mitigation*** within the transport sector and by ***building adaptation capacity***. The project followed a multi-stakeholder approach including cities, industry associations, financial agencies, and different Ministries of Government of India. Target groups of the project were policy makers, project developers, technology providers, financial providers and transport users.

1.1 Framework conditions and needs assessment

See point 5.2

1.2 Intervention strategy and theory of change

The overriding goal (***overall project objective***) 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***.

The intended impact of the project can therefore be understood as (1) *reduced climate risks through mitigation* and (2*) improved capacity of Indian stakeholders with regard to adaptation to climate change*.

The project aimed to achieve the overall project objective through ***two specific project goals:***

(1) Create an enabling environment for coordinating policies at national level to achieve a sustainable transport system.
(2) Build capacity of cities in improving mobility with lower CO_2 emissions.

In addition, the following other project goals were indicated in the project proposal, which in principle have to be regarded as well as intended impacts:

(3) Improved local environment by reducing emissions of local air pollutants;
(4) Improved mobility for all people by improving access to public transport and creating infrastructures for non motorized transport;
(5) Improved energy security for India as well as other countries by reducing the demand for fossil fuels.

The following target indicators had been included in the project proposal without indicating whether the indicators relate to the outcome or the outputs. No values nor a time frame had been indicated: (a) Transport Action Plans; (b) Low Carbon Mobility Plans; (c) Project proposals for sustainable transport. The following 11 work packages had been defined, which can be (partly) qualified as **outputs**:

1) Project management and coordination;
2) Development of sustainability indicators;
3) Integrated assessment at national level;
4) Case studies;
5) Framework for climate proofing;
6) Fuel efficiency study;
7) Methodology for Low Carbon Mobility (LCM) for cities;
8) Low Carbon Mobility (LCM) plans for cities;
9) Development of project proposals;
10) Project finding and policy recommendations;
11) Dissemination and information exchange.

2 EVALUATION DESIGN AND METHODOLOGY

2.1 Evaluation design and methodology

The re-evaluation of the present "Promoting Low Carbon Transport in India (PLCT)" project followed the general methodology, specifically developed for the evaluation of projects financed through the International Climate Initiative. This methodology is based on the five OECD-DAC criteria for project evaluation (relevance, effectiveness, efficiency, sustainability, impact), complemented by two additional criteria "coherence, complementarity and coordination" and "project planning and steering" in order to capture additional insights into IKI projects. The methodology includes a series of guiding questions and related indicators for each criterion, reflecting the diversity of thematic areas covered by the IKI. This re-evaluation was desk-based and was carried out in four days.

2.2 Data sources and quality

The main sources used for this re-evaluation were the project proposal, interim reports, the final report and the final evaluation report of UNEP/AREPO[2], carried out under the responsibility of the evaluation office of UNEP in September 2016. In addition, a number of project documents and relevant thematic documents, retrieved from the internet, were analysed. As the methodology and content of the final evaluation did not fully correspond with the above-mentioned IKI specific methodology, a re-evaluation has been carried out, transferring the narrative information from the final evaluation report into the IKI specific evaluation matrix. Information from other reports as mentioned above was used as evidence wherever necessary and / or appropriate. Not all indicators specified in the IKI evaluation methodology could be assessed due to a lack either of specific information or to the fact that some of the indicators were not relevant or applicable for the evaluation.

3 EVALUATION RESULTS

3.1 Relevance

Criterion	Evaluation question	Rating
Relevance	1.1 Degree of the project's contribution to IKI's program goals (60%)	2
	1.2 Relevance of the project for achieving the country's climate objectives (20%)	2
	1.3 Relevance of the project for its beneficiaries (20%)	3
Overall rating of relevance		**2.2**

Evaluation question 1.1:
Indicator 1.1.1: (Expected) Direct and/or indirect reduction of emission (in tCO_2eq[3]) related to an average project success.
There are no specific data available to document this indicator. The final report (FR) of the project indicates that a low carbon transport pathway for India including interventions in sustainable urban mobility, fuel economy, freight transport, promoting biofuel and decarbonising of electricity supply has a potential of reducing India's CO_2 emissions by 13 billion tonnes between 2010 and 2050" (FR, p. 10). The indicator is however assessed with grade 2 since a considerable reduction of more than 100,000 tCO_2eq[4] can be expected from the implementation of the three low carbon mobility plans, which have been developed in the frame of the project.

Indicator 1.1.2 (Expected) contribution to the adaptation to climate change
The project made an important contribution to adaptation of climate change through the policy recommendations and the capacity building measures of the project. Grade 2.

[2] Please note that in the following the term „evaluation report" is always used for the UNEP-AREPO evaluation and does note refer to the present report, which is the **re-evaluation report,** commissioned by the IKI evaluation management of BMUB.

[3] Carbon dioxide equivalency is a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO2 that would have the same global warming potential (GWP), when measured over a specified timescale (generally, 100 years). Source: https://en.wikipedia.org/wiki/Carbon_dioxide_equivalent

[4] Minimum quantity for grade 2 according to the evaluation scheme.

Evaluation question 1.2:
Indicator 1.2.1: Accordance of the project's activities / planned achievements with national climate policies (and / or energy policies, adaptation strategy, biodiversity strategy), sectoral and development plans, SDGs
The project can be considered as in line with important national policies in the field of adaptation and mitigation to climate change. India's National Action Plan on Climate Change (NAPCC) recognized that a large amount of GHG emissions can be mitigated from transport and the intended "Nationally Determined Contributions (INDC)" of India included a decarbonisation target of 33-35% of CO_2 intensity of GDP until 2030 with clearly outlined targets for its transport sector. Grade 2.

Indicator 1.2.2: Recognition of the project by the partner government and political partner/sector ministries (agriculture, forestry, health, or the like) of the partner country; (only to be applied for projects that were approved before 2013)
The project was highly recognized by the partner government and the project was developed in consultation with India's Ministry of Environment, Forest and Climate Change (MoEFCC) and the Ministry of Urban Development (MoUD). A collaboration with the Ministry of Environment and Forests, the Planning Commission and the Bureau of Energy Efficiency was established in the frame of the National Transport Action Plan. Grade 2.

Evaluation question 1.3:
Indicator 1.3.1: Accordance of the project's activities / planned achievements with the needs and acceptance of the target group;
Target groups of the project were policy makers, project developers, technology providers, financial providers and transport users. The evaluation report[5] assesses the accordance of the planned achievements with the needs and acceptance of the target group as rather critical. The report indicates that many of the project outputs are geared towards the scientific community rather than policy makers and advisors as the main target group. It further qualifies that "*there* [were] *no mechanisms to ensure that the project findings, which are valuable, are actually brought into concrete investment and policy making processes" (ER, p. 22).* Grade 3.

3.2 Effectiveness

Criterion	Evaluation question	Rating
Effectiveness	2.1 Is the outcome realistic from today's point of view?[6]	
	2.2 Were the outcomes and outputs achieved? (100%)	2.8
Overall rating of effectiveness		**2.8**

In the following, the outcomes of the project are assessed according to the prescribed evaluation methodology. Please note that outcome A and B have been derived from the project proposal and outcome C and D have been indicated in the final report only.

Objective	Indicator	Achievement
Outcome A: *[Create an enabling environment for coordinating policies at national level to achieve a sustainable transport system]*	No indicator formulated	4
Outcome B: *[Build capacity of cities in improving mobility with lower CO_2 emissions]*	Transport Action Plans; Low Carbon Mobility Plans	2
Outcome C: *[Improved guidance for policy decision making at national level.]*	Project proposals for sustainable transport	3
Outcome D: *[Increased capacity to understand and address climate change at city level]*	Transport Action Plans; Low Carbon Mobility Plans	2

[5] Please refer to footnote No 1;
[6] The evaluation instructions indicate that this criterion must not be graded: it is used to better judge the degree of goal achievement

Objective	Indicator	Achievement
Output(s)[7]		

Evaluation question 2.1:

Indicator 2.1.1: Achievability of the outcome and/or the indicators.

The achievability of the indicators can be answered with yes despite the fact that they were not equipped with values and had no indication of a time frame. The development of *Transport Action Plans*, *Low Carbon Mobility Plans* and *Project Proposals for sustainable transport* was within the scope of the possibilities of the project with regard to national partners (GoI), the available budget and the highly qualified implementing partners.

Outcomes have not been defined explicitly in the project proposal. The specific project goals can however be regarded as outcomes (*Create an enabling environment for coordinating policies at national level to achieve a sustainable transport system / Build capacity of cities in improving mobility with lower CO_2 emissions*). The achievability of the first outcome has to be put into question in view of the mandate of the project and its specific activities. The creation of an enabling environment requires a mandate whereby institutional restructuring and organisational development on a high political level are part of the mandate including corresponding activities. The project documents and the evaluation report do not provide any information to this regard and the project concretely focused on the provision of high level analysis, reports and case studies in order to facilitate policy decisions. This is part of an enabling environment, but does not create an enabling environment per se. This can only be achieved through the above mentioned institutional restructuring and organisational development for which the project had no mandate.

The achievability of the second outcome can be considered as given since the mandate and the resources of the project allowed for capacity building at city level.

The final project report referred additionally to two expected outcomes, which were not mentioned in the project proposal: "*Improved guidance for policy decision making at national level* **and** *Increased capacity to understand and address climate change at city level".* The achievability of those outcomes can be answered with yes in view of the institutional setting, the mandate, the activities, the time frame and the budget of the project.

Evaluation question 2.2:

Indicator 2.1.2: Degree of the achievement of outcomes and outputs

The verification of achievements of **outputs** presents a mixed situation despite the positive rating by the evaluation report. Information out of the evaluation and the final project report show that five out of 11 outputs have been achieved (Management and coordination, development of sustainability indicators, elaboration of case studies, method for low carbon mobility and development of low carbon mobility plans). Out of six remaining outputs, five have been assessed positively but with partly important restrictions. No information could be found in the evaluation report regarding to the planned framework for climate proofing and the final report mentions only at two occasions climate proofing as part of other outputs.

The first **outcome** (A) which aims at the creation of an enabling environment for coordinating policies at national level to achieve a sustainable transport system has only been achieved partly. The project provided a high number of important and relevant technical reports and policy recommendations. This is however "only" a prerequisite for an enabling environment, but does not create this environment per se. A much stronger political dimension and a different mandate including the possibility of institutional restructuring and organisational development would have been necessary. Grade 4.

The second outcome (B) which aimed at building capacity of cities in improving mobility with lower CO_2 emissions has been achieved since the project developed in a participatory manner three low carbon mobility plans for three mid-sized cities. The development included a broad variety of capacity building measures. Grade 2.

[7] The report scheme foresees as well a table for the detailed assessment of outputs. This table can be found in Annex 5.7 and the results of the assessment result has been summarized further below for reasons of volume.

The third outcome (C) aimed at improved guidance for policy decision making at national level. This outcome can be considered as achieved since the project developed important and relevant reports, case studies and methodologies. The evaluation report however underlines that reports and case studies are too academic and lack a necessary practical dimension[8]. Grade 3.
The fourth outcome (D) aimed at increased capacity to understand and address climate change at city level and can be considered as achieved since the project developed in a participatory manner three low carbon mobility plans for three mid-sized cities. The focus on mid-sized cities has a high potential for replication in view of the number of mid-sized cities in India. The evaluation report confirms this view by the indication that "*Building capacity at the local level however, was a feasible objective and can be considered largely achieved" (ER, p. 63).* Grade 2.

3.3 Efficiency

Criterion	Evaluation question	Rating
Efficiency	3.1 Degree of justification for the invested effort compared to the reference value/frame (40%)	2
	3.2 Degree of invested effort necessary to achieve the project goal(s) (0%)	n/a
	3.3 Degree of use of the project's outputs (e.g. capacities, knowledge, equipment) (35%)	3
Overall rating of efficiency		**2.5**[9]

Evaluation question 3.1:

Indicator 3.1.1: Costs per emission reduction (€/tCO_2eq); cost description or cost analysis:

a) compared to sector specific mitigation costs, comparable technologies or in comparison to other interventions OR b) through the preservation of carbon sinks compared to comparable interventions.

The evaluation report is very positive about the potential of the project in contributing to mitigation: "*There is likely to remain a legacy from the project with regard to long-term CO2 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* (ER, p.31). However, concrete figures regarding reduction of CO_2 emissions due to project activities could not be found in the available project documents. The final report indicates that the overall potential within the entire Indian transport sector for GHG emission is estimated at 13 billion tonnes between 2010 and 2050 (FR, p. 10). In view of the high potential of the project for the reduction of GHG emissions and the above positive statement of the evaluation report, it is concluded that the project is cost effective in the sense that the actual cost of the project of € 2,127,859 in relation to its reduction potential can be considered as highly effective. Grade 2.

Indicator 3.1.2.: Costs: a) of adaption to climate change compared to the economic risks without adaptation measures or compared to comparable interventions (cost description or cost analysis)

The project is primarily a climate change mitigation project. The strong policy development aspect of the project in combination with capacity building measures can however also be qualified as contributing to climate change adaptation. The policy related results of the project and the actual costs of the project are assessed as highly efficient. Grade 2.

Indicator 3.1.3: Cost-effectiveness of the implemented measures and of the deployed personnel compared to the output, if possible distinguish between the entire costs of measures and the costs of personnel (production efficiency).

The production efficiency is difficult to assess since the administrative cost comprise external services. The percentage of administrative cost (including external services) in relation to total

[8] "*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*" (ER, p. 31)

[9] It is foreseen to weigh the evaluation question 3.2 with 25%. The question was however not applicable and the respective weight of 25% has been attributed to evaluation question 3.1 with 15% and to evaluation question 3.3 with 10%.

cost is very high (68.38%) and would be an indication for a critical production efficiency. The document "Details zum Budget – Annex3" explains however that external services mainly comprises personnel and consultancy cost and should therefore not be subsumed under administrative cost. The percentage of administrative cost, excluding external services in relation to total cost can be assessed as moderate (21.65%) and in the production efficiency can therefore be assessed as positive. A cost-effectiveness of the implemented measures compared to produced outputs is given in view of the number and quality of outputs. Grade 2.

Evaluation Question 3.2:

Indicator 3.2.1: Requirement (costs/allocation efficiency) of individual measures implemented to achieve the project goal(s) (only where comparison data is available, e.g. costs/ton CO2 reduction)

No comparison data are available with regard to costs per ton of CO_2 reduction. The indicator can therefore not be assessed.

Evaluation question 3.3:

Indicator 3.3.1: Degree of use of the outputs by the target group

Outputs of the project have been used, albeit with some restrictions. Three out of four planned low carbon mobility plans have been developed in partnership with cities, based on the methodology, developed by the project. The evaluation report states, that the "*Toolkit for Comprehensive Mobility Plan (CMP) … 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*" (ER, p. 26). The delay of the project did not allow to feed project recommendations into the JNNURM, which was a city-modernisation scheme launched in 2005. The JNNURM was however replaced by the Smart Cities Mission and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) in 2015 and two of the pilot cities (Udaipur and Rajkot) have been selected to be part of the Smart Cities Initiative (ER, p. 6). The most critical point with regard to the use of outputs is the statement of the evaluation report, that "*more concrete recommendations with regard to specific policies would have increased the influence on outcomes*" (ER, p. 31). Grade 3.

3.4 Impact

Criterion	Evaluation question	Rating
Impact	4.1 Degree of achievement of qualitative and quantitative climate-relevant impacts (80%)	3
	4.2 Degree of achievement of other un-intended relevant impacts (0%)	n/a
	4.3 Degree of achievement of multiplication effects regarding result dissemination (20%)	3.5
Overall rating of impact		**3.1**

The evaluation instructions of the IKI-BMUB evaluation management indicate for the criterion of impact that the assessment of this question has to be done based on the impact objectives described in the planning documents/project reports. The evaluation scheme provides however in addition indicators which shall be assessed and those indicators cover only the implicitly defined two major intended impacts of the project. The project proposal does not refer explicitly to intended impacts, but the following points can be derived from the proposal and qualified as intended impact:

- **Reduced climate risks through mitigation** (in the form of lower CO2 emissions);
- **Improved adaptation capacity** (in the form of improved capacity of Indian stakeholders to contribute to the adaptation to climate change).

In addition, further effects are described which can be understood as well as intended impacts (PP, p. 11):

- Improved energy security for India as well as other countries by reducing the demand for fossil fuels;
- Improved local environment by reducing emissions of local air pollutants;
- Improved health for people because of reduced local air pollutants;
- Contribution to economic growth: increased productivity as a result of less traffic, congestion and shorter travel time;
- Contribution to social development: balanced growth of transport modes and equitable access to mobility and help in poverty alleviation.

The intended impact of lower CO_2 emissions is quantified, but only for the entire transport sector and can therefore not be used to measure the impact on a quantitative basis.

Evaluation Question 4.1:

Indicator 4.1.1.: Realized/potential direct and indirect emission reductions and increase of carbon stocks in the project region beyond the project's outcome level (t/CO_2eq)

On the basis of the existing information only the **potential** for direct emission reduction can be assessed. The major output of the project was the development of three low carbon mobility plans. All the three plans comprise data on the existing emission situation and projections under a "business as usual scenario" and different "sustainable scenarios". Combined, it can be concluded that under a "business as usual scenario" emissions might increase from 32.63 million tons of CO_2 to 53.42 million tons by 2041 and under the maximum sustainability scenario a reduction to 26.02 million tons of CO^2 can be expected (see Annex 5.7). Grade: 2.

Indicator 4.1.2: The region/community/government is better prepared for future climatic events beyond the project's outcome level (e.g. prevention, swift rehabilitation, etc.)

In general, it can be derived from the evaluation report and from the final project report that the capacity of partner institutions and implementing institutions has been raised. The development of the three LCMP's "*made a good contribution to capacities in relevant local authorities*" (ER, p. 33). The final report indicates among other things, that: "*Approximately 13 national and city level workshops were organized to entice policy makers and key stakeholders regarding the low carbon approaches in the transport sector, …and [*therefore*] built the capacity of existing institutions on transitioning towards a low carbon mobility pathway* (FR, p. 6). In addition it was: "*envisaged that capacity built from work undertaken at the city level will be replicated countrywide in collaboration with the Institute of Urban Transport (IUT)"* (FR, p. 6). Grade 2

Indicator 4.1.5: Realized/potential socioeconomic impact beyond the project's output level

The final report claims that the project had a broader vision beyond mitigation and adaptation. "*The project also promoted a broader planning vision that was done by bringing together professionals from different fields including transport and planning, social inclusion, gender, safety and climate change. This multi-disciplinary approach was aimed at creating socially optimal transport planning that can truly improve the lives of people in India -- especially the poor".* (FR, p. 3). The evaluation report however indicates that there was only one specific deliverable regarding social, environmental and economic co-benefits (ER, p. 71). "*Beyond that no specific safeguards were planned for"* (idem). The specific deliverable is a publication on "Low-Carbon Mobility in India and the Challenges of Social Inclusion: Bus Rapid Transit (BRT) Case Studies in India"[10]. The conclusion for this re-evaluation is therefore that no socio-economic impact beyond the project's output level can be documented, despite the claim of the project. Grade: 5

Evaluation Question 4.2:[11]

[10] https://www.researchgate.net/publication/257136914_Promoting_low_carbon_transPort_in_india

[11] These can also be impacts that are not "climate-relevant" (e.g. social, economic, safeguards)

Indicators 4.2.1 and 4.2.2:

No positive nor negative un-intended side effect could be identified in the project documentation and related evaluation reports.

Evaluation Question 4.3:

Indicator 4.3.1: Scaling-up of the project approach in the project area (India)

Concrete scaling up activities did not materialise in the project. The evaluation report indicates that: "*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" (*ER, p. 33ff). In addition, it was mentioned that 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…were made to replicate or upscale the project*" (ER, p. 39). The evaluation report mentions however that the selection of mid-sized cities had a high potential for replication since India has many mid-sized cities. There is nevertheless a restriction to this positive statement in the sense that the LCMP approach is highly sophisticated and therefore difficult to replicate ("*the thorough approach sets the bar high for others to easily replicate it*"). The evaluation report mentions however, that "*the involvement of IUT and the CMP guidelines will make a good contribution to the replication of the recommendations*"[12] (ER, p. 39ff) and 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" (*ER, p. 49). The statements of the evaluation report are not fully coherent, but the negative aspects are clearly spelled out. The grade 4 is therefore allocated for this indicator.

Indicator 4.3.2: Replication outside the actual project area (outside India)

Replication outside India was not an objective as such, but one of the produced papers in the frame of the project provided "*a good basis for an upscaling of the LCT activities beyond India*" according to the evaluation report (ER, p. 30)[13]. Grade: 3.

3.5 Sustainability

Criterion	Evaluation question	Rating
Sustainability	5.1 Degree of verification of the project's outcome after project end (25%)	3
	5.2 Degree to which the national political project partner/partners and beneficiaries have the capacities of sustaining and continuing the positive project results after project end (30%)	2
	5.3 Degree of continuation of the project's contributions by the national political project partner/partners/beneficiaries and/or third parties with their own resources after project end (20%)	4
	5.4 Degree of ecological, social, political and economic stability in the project area (25%)	2.7
Overall rating of sustainability		**2.8**

Evaluation Question 5.1:

Indicator 5.1.1: Verifiable or expected achievements after project end

Verifiable achievements after project end are first and foremost the numerous publications and reports of the project, the three low carbon mobility plans and the revised toolkit for Low Carbon Comprehensive Mobility Plans, which became the default standard in India for low carbon mobility planning. It has however to be stated that in March 2019, period in which the re-evaluation took place no single trace for low carbon mobility plans nor a corresponding toolkit could be found on the homepages of the Ministry for Housing and Urban Affairs or the Ministry

[12] Recommendations as defined in the low carbon mobility plans.

[13] 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.

of Road Transport and Highways. The plans as such are however still available in the Internet. Grade: 3.

Evaluation Question 5.2:

Indicator 5.2.1: Capacities of the political partner, other project partners and beneficiaries to maintain and continue positive project achievements.

The project partners, in particular the implementing partners have a high reputation in India and it can be assumed with a high degree of plausibility that the staff of those institutions are able to maintain and continue positive project achievements. Grade: 2.

Evaluation Question 5.3:

Indicator 5.3.1: Degree of continuation of the project's achievements with own financial resources by the political partner/ partners/ target group / third parties

There is no clear evidence whether (political) partners and / or the target group were able to continue the project's achievements with own financial resources. The final report and the evaluation report pinpoint to the fact that two out of three selected cities have been integrated into the Smart City Mission Program of India, launched in 2015. The report on Smart City Mission-India from July 2018 however does not mention at all low carbon mobility nor provides it any hint regarding the achievements of the UNEP low carbon mobility project (see Sesei 2018). The website of the CEPT University does not provide any recent single document with reference to the project or to low carbon mobility planning in general. All related documents date from the project period. This is the same for the Indian Institute of Technology. Grade: 4.

Evaluation Question 5.4:

Indicator 5.4.1: Probability of occurrence of ecological risks (= ecological balance) that can negatively influence the sustainability of the project

No grade is allocated since the consideration of occurrence of ecological risks for the judgement of sustainability does not make sense in the context of the project. The project was mainly a policy advice, (soft) technology transfer and capacity building project.

Indicator **5.4.2:** Probability of occurrence of social risks (= social justice) that can negatively influence the sustainability of the project

The project discussed this aspect in the frame of one study: "*Low Carbon Mobility in India and the Challenges of Social Inclusion: Bus Rapid Transit (BRT) Case Studies in India*". The issue of social inclusion is discussed in relation to Bus Rapid Transit Systems and shows clearly that: "*the BRT is mainly serving the middle-income groups, …[*and*] has not been able to reach low-income groups*"(page 2). The study concludes that "*It is important for projects like BRT systems to be more socially inclusive, which can be achieved by recognising and including the urban poor*" (idem page 4). The conclusion for the re-evaluation is therefore that there is a social risk in as far as a non-recognition of the social aspect can lead to a restricted project achievement and unsustainability in the medium or long term if the situation and the interest of the urban poor are not recognized. Grade 3.

Indicator 5.4.3: Probability of occurrence of political risks (= political stability) that can negatively influence the sustainability of the project.

The implementation of the project has clearly shown that the delay of the project has led to a situation whereby the opportunities of an existing city-modernisation scheme could not be captured since this scheme did not play any longer an important role after the change of the administration (see ER, p. 6). It has however to be mentioned that two cities with which the project collaborated for the LCMP's could later participate in the important follow up initiative "Smart City Mission". Grade: 3.

Indicator 5.4.4: Probability of occurrence of economic risks (= economic performance) that can negatively influence the sustainability of the project.

The probability of economic risks is always high in a globalized world. India however has a robust growth rate and the average GDP growth between 2010 and 2017 was 6.93%[14]. In principle the occurrence of economic risks has to be regarded from a positive (economic growth) as well as negative side (economic stagnation or recession). A sustained good economic situation can be counterproductive for the objective of low carbon mobility. The better the economic situation in a country like India with a fast growing middle class, the more the likelihood for an increased individual vehicle use. A good economic performance provides however also the means to invest in low carbon mobility. Poor economic performance will certainly slow down the increase of individual motorization, but will also not provide sufficiently the means to invest in low carbon mobility. Both scenarios (good or poor economic performance) can have therefore positive as well as negative impacts on GHG emissions. In view of the economic success story of India the risk of poor economic performance is estimated to be moderate and therefore Grade 2 is applied to this indicator.

3.6 Coherence, complementarity and coordination

Criterion	Evaluation question	Rating
Coherence, complementarity and coordination	6.1 Degree of the project's coherence and complementarity towards projects of other donors (incl. other German federal donors) and the country's government (50%)	3
	6.2 Degree to which the chosen cooperation forms during project implementation ensure an adequate coordination with other donors (incl. German donors)/project country's government/stakeholder groups (25%)	4
	6.3 Degree to which the chosen cooperation forms during project implementation assure an adequate coordination with national state agencies and stakeholder groups (25%)	3
Overall rating of coherence, complementarity and coordination		**3**

Evaluation question 6.1:

Indicator 6.1.1: Coordination / harmonization of the project concept with other donors and the partner country, including other German ministries regarding complementarity, coherence, additivity, sustainability, and avoidance of duplicity

The final report of the project, an online document regarding the final workshop of the project[15] and the evaluation report do not provide sufficient information to assess this indicator. It can however be assumed that coordination and the avoidance of duplicity was mainly given due to the institutional framework of the project which included important steering and coordination players in India such as the Ministry of Environment and Forests, the Ministry of Urban Development and corresponding Departments at state level and the Ministry of Road Transport and Highways. Grade: 3.

Evaluation question 6.2:

Indicator 6.1.2: Ongoing on-site coordination

This indicator cannot be assessed on the basis of the existing documentation. There are indications in the interim report that a coordination with GIZ was envisaged, but the final report and the evaluation report do not mention any collaboration with GIZ. Grade 4.

Evaluation question 6.3:

Indicator 6.1.3: Ongoing on-site coordination

The chosen forms of cooperation assure an adequate cooperation with stakeholder groups, but not with national state agencies according to the evaluation report. (ER, p. 35). This is somewhat

[14] https://www.indexmundi.com/g/g.aspx?c=in&v=66

[15] UNEP (2015): Final Conclusion Workshop Promoting Low Carbon Transport in India, Manekshaw Centre, 26th November 2015.

contradictory to the observation that the **cooperation with MoUD and its agencies** lead to the revision of the toolkit for low carbon mobility planning which became later default transport planning guide for all Indian cities. This cooperation can be judged as a cooperation with national state agencies. Grade: 3.

3.7 Project planning and steering

Criterion	Evaluation question	Rating
Project planning and steering	7.1 Degree of project planning quality (50%)	3.4
	7.2 Degree of project steering quality (50%)	3
Overall rating of project planning and steering		**3.1**

Evaluation question 7.1:

Indicator 7.1.1 The (ecological, social, institutional and economic) framework conditions, other sector-relevant projects and risks were adequately analysed and considered during planning, among others the consideration of the capacities of the political partner/ partners and the implementing agency

The ecological and economic framework conditions have been taken sufficiently into account during planning, which is documented in the project proposal. This is only partly the case for the social and political frame conditions since the social aspect was covered only in one case study and since the inclusion of state level agencies was insufficient according to the evaluation report (ER, p. 35). Risks have been adequately considered and the capacity of the political partners and the implementing agency has been sufficiently taken into account (see project proposal, final and evaluation report). Grade: 3.

Indicator 7.1.2: A comprehensive theory of change and/or intervention logic is consistent and coherent, i.e. the objectives (outputs, outcome, impact) are realistic and address the core problem (ATTENTION: This is valid for projects approved after 2011).

The project has been approved before 2011 (10.06.2010) and therefore this indicator is not applicable.

Indicator 7.1.3: A sound activity and budget plan (operation plan) with clearly defined activities is available.

A budget and an activity plan is available and the budget plan is fairly detailed. The activity plans include a time line and milestones. Grade: 2.

Indicator 7.1.4: Indicators for measuring the achievement of project objectives are SMART and informative, and are measurable with realistic efforts.

The indicators for measuring the objective are not SMART. They are not specific, not time bound and are not armed with target values, which makes them difficult to assess. In addition, the indicators are output indicators and not outcome indicators, which makes the assessment of the project goals very difficult and impossible to measure impact. Grade: 4.

Indicator 7.1.5: The foreseen implementation timeframe was realistically estimated, incl. predictable events (e.g. elections, yearly floods, religious festivities)

The originally foreseen implementation period appears to be insufficient with regard to the first project objective, the creation of an enabling environment for policy coordination, which requires usually a longer implementation period. The project duration was finally one year and three month longer as initially planned including a dormant period of over one year due to the non approval of a requested extension by UNEP. The request for extension came however very late and had to be considerably revised due to lack of quality according to BMU (see BMU 2015). Grade: 3.

Indicator 7.1.6: A convincing exit strategy or a plan for project extension was developed timely.

The project has not developed an exit strategy and a request for extension was submitted late and of poor quality which led to a long period before its approval. Grade: 4.

Evaluation question 7.2:

Indicator 7.2.1: An adequate monitoring (&evaluation) system (incl. budget monitoring) is established since project start, oriented towards timely adaptive management, and includes baseline data.

An adequate monitoring & evaluation system has not been established. The evaluation report indicates that: "*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.*" (ER, page 37). Baseline data were however available and budget monitoring has been possible. Grade: 3.

Indicator 7.2.2: The monitoring & evaluation system is adequately used (e.g. timely adaptive management, continuous adaptation of the operation plan, risk management, etc.)

The non formalized monitoring system focused on the tracing of delivering of outputs. To this regard it was adequately used and has led to adaptive management and the adaptation of the operational plan. The grade 3 is allocated since the system was not a state of the art system and did not include outcome and impact level.

3.8 Additional questions

Not applicable.

4 FINDINGS AND RECOMMENDATIONS

The evaluation report of UNEP-AREPO (see ER, p. 37)[16] summarizes the conclusions as follows: The project has made a **substantive effort to contribute to tangible outcomes**, namely national policy action and local implementation action through the development of a large number of deliverables and outputs. The 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**. In the context of the project, there was however a **high level of dependence on national funding programmes** for the implementation of recommendations out of low carbon mobility plans and action. The LCT project outputs can provide a **useful input into further work that may eventually lead to emission reduction impacts**, considering the high climate change mitigation potential of the transport sector in India. The high-level scenarios and guidelines were very useful for awareness raising, **but 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, which would possibly have had a substantial CO2 emission reduction impact.

The conclusions are shared by the author of the re-evaluation. Two issues appear to be of importance with regard to the weaknesses of the project. Firstly, the development of a formal and professional M&E system for project implementation and a consistent theory of change or logical framework for project planning would have probably created an awareness of the responsible persons for the project, that there is an important missing step between the defined outputs and the aspired outcomes as well as impact. Secondly, the missed opportunity to cooperate from the beginning with potential Indian and / or international funding institutions such as the German Development Bank KfW or the Asian Development Bank in order to ensure as far as possible that recommendations out of the low carbon mobility plans can be implemented.

The related recommendations are therefore:

[16] Accentuation by the author of the re-evaluation.

i. The development of a comprehensive theory of change or logical framework and a corresponding state-of-the-art M&E system is of absolute necessity and should be regarded as minimum criteria by BMU for an approval. The author is aware that this is the case since 2013 in the frame of the IKI initiative. It is however still astonishing that projects which were planned after the turn of the century do not comprise adequate M&E systems, which were already common tools at that time.

ii. Projects that aim to mitigate climate change through GHG emission reduction which require substantial investments should establish from the beginning partnerships with funding institutions which have the potential to fund the necessary investments.

5 ANNEXES

5.1 Theory of change

The overriding goal (***overall project objective***) 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***.

The intended impact of the project can therefore be understood as (1) *reduced climate risks through mitigation* and (2*) improved capacity of Indian stakeholders with regard to adaptation to climate change*.

The project aimed to achieve the overall project objective through ***two specific project goals:***

(1) Create an enabling environment for coordinating policies at national level to achieve a sustainable transport system.
(2) Build capacity of cities in improving mobility with lower CO2 emissions.

In addition, the following other project goals were indicated in the project proposal, which in principle have to be regarded as well as intended impacts:

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

The following target indicators had been included in the project proposal without indicating whether the indicators relate to the overriding goal or the specific project goals. No values nor a time frame had been indicated:

(a) Transport Action Plans; (b) Low Carbon Mobility Plans; (c) Project proposals for sustainable transport.

The following 11 work packages had been defined which can be (partly) qualified as **outputs**:

1) Project Management and coordination;
2) Development of sustainability indicators;
3) Integrated assessment at national level;
4) Case studies;
5) Framework for climate proofing;
6) Fuel efficiency study;
7) Methodology for low carbon mobility (LCM) for cities;
8) Low Carbon Mobility (LCM) plans for cities;
9) Development of Project proposals;
10) Project Finding & Policy Recommendations;
11) Dissemination and information exchange.

Reconstructed ToC "Low Carbon Mobility Project India", implemented by UNEP and financed by BMUB via ICI (IKI)

Outputs		Outcome		Impact
1) Project management and coordination;		(1) Create an enabling environment for coordinating policies at national level to achieve a sustainable transport system.		
2) Development of sustainability				
3) Integrated assessment at national level;		(2) Build capacity of cities in improving mobility with lower CO_2 emissions		(a) Reduced climate risks through mitigation
4) Case studies;				
5) Framework for climate proofing;		(3) Improved local environment by reducing emissions of local air pollutants;		
6) Fuel efficiency study;				
7) Methodology for Low Carbon Mobility (LCM) for cities;		(4) Improved mobility for all people by improving access to public transport and creating infrastructures for non motorized transport;		(b) Improved capacity of Indian stakeholders with regard to adaptation to climate change
8) Low Carbon Mobility (LCM) plans for cities;				
9) Development of project proposals;		(5) Improved energy security for India as well as other countries by reducing the demand for fossil fuels.		
10) Project finding and policy recommendations;				
11) Dissemination and information				

yellow = adaptation
green = mitigation

5.2 Framework conditions and needs assessment[17]

At the time of the project proposal India like China had attracted a lot of attention on account of its robust economic growth in the last few years; even in year 2008 when many global economies were facing a recession, the economic growth was a healthy 6.7%. Despite a reduction in poverty due to economic growth, nearly a third of the population has been below the poverty line. The economic growth has however led to an increased demand for energy and increase in CO_2 emissions. India was the fourth largest GHG emitter in the world in 2010 but with the second largest population, the per capita emissions were much below the world average. The GDP intensity of emissions was also below that of many developed and emerging economies.

In the year 2005, 13% of CO_2 emissions were from the transport sector. The transport emissions in India mainly comprised rail and road, with shipping and air playing a minor part. The growth in the road sector had been accompanied by an unsustainable growth in vehicle ownership and ownership increased by 9.1% between 1990 and 2004. It was expected that this trend would continue in future if the current policies continue. The growth of had led to increased congestion, local air pollution, road accidents and CO_2 emissions, and the problem was most severe in cities with dense populations and space constraints.

Several Ministries had already responded to this situation at the time of the project proposal (Ministry of Road Transport and Highways, Ministry of Railways, Ministry of Urban Development, Ministry of Petroleum and Natural Gas and Ministry of Environment & Forests). The responses have however been regarded as inadequate from a climate perspective because of coordination problems of government institutions, increase in personal vehicles, insufficiency to change policies only by demonstration projects, in-effectivity of existing climate regimes with regard to transport and little effort to climate proof transport infrastructure.

The Indian transport sector had therefore been assessed to be on an unsustainable path. Without a major change towards sustainable transport systems the sector will contribute in a major way towards increasing the climate risks (by contributing to GHG emissions).

India's National Action Plan on Climate Change recognized however that a large amount of GHG emissions from transport can be mitigated 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. In addition to these, a sustainable transport system relies on demand substitutions (e.g. transport with information), urban planning (to reduce trips, trip lengths, promote non-motorized modes and make transport more accessible) and integration of long-term risks (e.g. climate) to create a transport system, which is economically, socially and environmentally sustainable.

5.3 Summary description of results of original evaluation report

Relevance:
The OECD-DAC criterion of relevance will be assessed on the basis of the overall evaluation question: "*Do the project goals take into account IKI's overall goals, and the goals of the partner country and the beneficiaries".* The UNEP evaluation report (hereafter ER or evaluation report) qualifies the project as "…*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 (ER, p. 38)*. The UNEP evaluation report (ER) assesses the relevance as satisfactory.

Effectiveness.
The evaluation report provides an assessment of effectiveness criteria in relation to different levels. Firstly, the achievement of outputs was qualified as "Satisfactory". The achievement of project goal and planned objectives was rated as "Moderately Satisfactory" and described as follows: "*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*

[17] UNEP DTIE (2010): Project proposal – Promoting Low Carbon Transport in India. PB IKI, Berlin.

comprehensive enabling environment to coordinate low-carbon transport policies at the national level is not yet operational" ER, p. 39. More details can be found in Annex 5.7.

Efficiency:

The evaluation report provides various indications and assessment regarding efficiency. The financial management (ER, p. 36), the size of the consortium and the achieved synergies (ER, p. 34) and the solid partnership on which the project was based (ER, p. 48) have been assessed positively. The delay of the project, which led to a limited opportunity to directly contribute to the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and the Smart Cities Mission (ER, p. 34) and a missing greater level of flexibility to move ahead in cities (ER, p. 31) have been assessed as problematic.

Impact:

The evaluation report provides a mixed assessment with regard to impact. It is stated "*that no immediate impacts were expected to occur during the project's lifetime*" (ER, p. 17) since the project envisaged primarily to inform for long-term policy change and "*the desired target was not sufficiently designed for impact*" (ER, p. 22). There were "*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*" (ER, p. 22). This is further complicated by the fact that no indicators were formulated for the intended impact and consequently no data were collected to inform a M&E system (ER, p. 37). The author of the evaluation report expects however a long term 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*" (ER, p. 58).

Sustainability.

The final report of the project describes several topics which are used by the author of the final report as evidence for sustainability (see FR, page 10ff). Three out of the described issues can be qualified as evidence for sustainability. (1) The **selection of mid-sized cities** had a high potential for replication and two out of three cities could participate in the Smart Cities Mission, whereby the potential for implementing recommendations out of the LCMP's was strengthened. (2) The **cooperation with MoUD and its agencies** lead to the revision of the toolkit for low carbon mobility planning which became later default transport planning guide for all Indian cities. (3) The **capacity building** of (already) highly acknowledged Indian partners ensured that the knowledge is available in the long term and allowed to influence policy decision-making processes in an informed manner.

The evaluation report confirms the positive contribution to sustainability through the adequate selection of target cities (ER, p. 39) and states that *"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"* (ER, p. 39). The evaluation report mentions however also that „*there is no coherent long-term strategy to sustain the project beyond its lifetime*" (ER, p. 62).

Coherence, complementarity and coordination

The evaluation report does not provide much information with regard to the issue of coherence, complementarity and coordination. The coordination issue is mainly discussed with regard to internal aspects, but not in view to other donors or related Indian institutions (ER, p. 10). Internal coordination in relation to the project design was assessed as positive since there was a good identification of key stakeholders and active participation of those stakeholders (ER, p. 16). It is however mentioned, that "*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" (ER, p. 35).

Project planning and steering

Project management and implementation was according to the evaluation report reasonably straightforward (ER, p. 35). This includes financial management which was described as „well-handled" (idem, p. 36). Supervision and backstopping by UNEP was classified as appropriate (idem, p. 37). The M&E system has been however assessed as rather critical „*No specific monitoring and evaluation plan [*had*] been developed*" (idem, p. 41). The focus was on „*on ex-ante assessments, data collection and scenario development, but there was little attention given to the evaluation of the direct project impact*" (idem, p. 37).

5.4 Itinerary of desktop (and on-site) evaluation

Not applicable

5.5 List of interviewed persons

Not applicable.

5.6 List of data sources

BMU (2015): Aktenvermerk Referat KI II 7 Berlin, XX.XX.2015, KI II 7 - 42206-4/129, Berlin;

Mahadevia, D., R. Joshi and A. Datey (2012): Low-Carbon Mobility in India and the Challenges of Social Inclusion: Bus Rapid Transit (BRT) Case Studies in India, UNEP;

MoUD (2014): Toolkit for comprehensive mobility plan (CMP), revised, 2014; New Delhi.

MoUD (2014): National Urban Transport Policy (http://www.itdp.in/wp-content/uploads/2014/11/NUTP-2014.pdf)

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.

Roychowdhury, A. (2018): Towards Clean And Low Carbon Mobility - Addressing affordability of sustainable transport and reducing real world emissions. International Conclave New Delhi, September 4-5, 2018, Centre for Science and Environment, New Delhi.

SESEI (2018): Report on Smart City Mission-India, New Delhi.

UNEP (2010): Project proposal to the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Berlin: Promoting Low Carbon Transport in India;

UNEP (2013): Low carbon comprehensive mobility plan for Udaipur, New Delhi.

UNEP (2014): Promoting low carbon transport in India: Low – carbon Comprehensive Mobility Plan: Vishakhapatnam, New Delhi.

UNEP (2014): Promoting low carbon transport in India: Low – carbon Comprehensive Mobility Plan: Rajkot, New Delhi.

UNEP (2015): Final Conclusion Workshop Promoting Low Carbon Transport in India, Manekshaw Centre, 26th November 2015, India.

UNEP (2016): 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, Berlin.

UNEP (2016): Final Report Promoting Low Carbon Transport in India,

UNEP (2016): Final Report Promoting Low Carbon Transport in India – Financial Report, 27.06.2016.

5.7 Abbreviations

AMRUT	Atal Mission for Rejuvenation and Urban Transformation
BMU	Ministry for the Environment, Nature Conservation and Nuclear Safety
BRT	Bus Rapid Transit
CMP	Comprehensive Mobility Plan
ER	Evaluation report
FR	Final (project) report
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GHG	Green House Gas
GIZ	Deutsche Gesellschaft für internationale Zusammenarbeit
GoI	Government of India
IA	Implementing agency
ICLEI	Local Governments for Sustainability
IKI	International Climate Initiative
IUT	Institute for Urban Transport
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
LCM	Low carbon mobility
LCMP	Low carbon mobility plan
LCT	Low carbon transport
M&E	Monitoring and Evaluation
MoEFCC	Ministry of Environment, Forest and Climate Change
MoUD	Ministry of Urban Development
NAPCC	India's National Action Plan on Climate Change
PLCT	Promoting low carbon transport (project name)
PB	Programme Office International Climate Initiative
SDG	Sustainable development goal(s)
SMART	Specific – Measurable – Attainable – Relevant – Time-bound
tCO2eq	Carbon dioxide equivalency
UNEP	United Nations Environment Program

5.8 Evaluation matrix