

## **Final Report**

# **Review CapaCITIES project, Phase I**

### **Principal**

Federal Department of Foreign Affairs  
Embassy of Switzerland in India and Bhutan  
Climate Change and Development  
Nyaya Marg, Chanakyapuri  
New Delhi, India

### **Authors**

Prof. Usha P. Raghupathi  
Dr. Jacqueline Schmid  
Charlotte Spöerndli

Independent Consultant  
SDC/DRR Thematic Network  
Brandes Energie AG

## Executive Summary

This report presents the review of the Capacity Building for Low Carbon and Climate Resilient City Development Project (CapaCITIES) Phase I, supported by the Global Programme Climate Change and Environment (GPCCE) of the Swiss Agency for Development Cooperation (SDC). The objective of the review is to assess the overall performance of the project, including the impact, outcomes, outputs, partnerships, processes, and opportunities for potential scaling-up (replication or broadening the scope of engagement) and to make recommendations for a potential next phase. The review is based on a set of criteria that includes relevance, impact, effectiveness, efficiency, and sustainability of the CapaCITIES project. The assessment and the recommendations are based on documents provided by SDC and project partners, interviews performed in Switzerland and India, and visits to project cities.

The reviewers got a generally very positive impression of the project: the comprehensive set-up, linking cross-sectoral analysis to selecting most relevant action in a given context, to financing aspects, providing a proof of concept with very high value of showcasing that concrete and replicable projects can contribute to achieving 'climate resilience'. The review team recommends continuing the project in a second phase, by considering a number of suggestions.

The beneficiary cities very positively acknowledged the support by CapaCITIES, as it showcased feasible approaches with concrete actions.

The **outcome-wise main achievements** of Phase I (till January 2019) are summarised below:

**Outcome 1: Capacities of city authorities in four partner cities to plan and implement mitigation and adaptation measures are enhanced:** The Climate Resilient Cities Action Plan (CRCAP), based on climate profiles have been developed in all four cities and training has been provided to city officials and other stakeholders on the CRCAP methodology and sector/subject specific topics. Learnings of the project related to the CRCAP have been included in the Climate Resilient Cities Methodology, used by ICLEI in their work with cities on global level. The CRCAPs are the first action plans in India at municipal level combining climate mitigation and adaptation aspects and are a good basis for mid-term decisions by the cities. The municipal commissioners have highly appreciated the CRCAP as it has helped them to look at the climate change topic in an integrated manner.

**Outcome 2: City level climate change mitigation measures for priority sectors initiated:** Quick-win projects in the field of climate change mitigation have been carried out in all four cities. A fact sheet has been published for each of the finalized quick win projects. The cities have highly appreciated these quick-win projects. Several projects have brought about a change in the mind-set of officials (e.g Rajkot). The projects complement the efforts of the municipal corporations, provide new perspectives, and strengthen them. The cooperation with Swiss and Indian experts ('on-the job training') has improved the technical capacities of city engineers.

**Outcome 3: City level climate change adaptation measures for priority sectors initiated:** Quick-win adaptation projects have been implemented in two cities, in sectors that have been asked for by the MC and they address their most urgent needs. The adaptation projects address the most critical sector that will be impacted by CC in future, which is water. These projects contribute to water saving and safeguarding scarce water resources (ground water) and will have both short and long-term impact on cities. Solid waste management, with an important co-benefit with respect to flood management, was a priority in all cities.

**Outcome 4: Awareness on low carbon and climate resilient city development is increased in India and other countries:** City Climate Profiles for all four cities have been prepared and published on the project's website. The ClimateResilientCities methodology was developed/ further improved, published and

circulated in various stakeholders' workshops, and city governments' programmes. A 'Best practices' workshop has been organised to exchange experiences between the pilot cities and other Indian cities. Experiences and findings of the project have been presented at several international conferences (e.g. Vietnam, Freiburg (DE), Sri Lanka). A visit of project city officials to Switzerland was organised by the Implementing Agency. The idea of an 'Indian Climate Change Award' is being discussed with project partners and national public/private partners.

**The main recommendations of the review are given below. For detailed recommendations, please refer to the main text of the present report.**

#### **Main Recommendations for the remainder of Phase I**

- Either extend phase I or make sure that activities started in phase I in the pilot cities are carefully brought to an end in phase II (independent of whether phase II will be active in the same pilot cities or not), including at least one bankable project per pilot city.
- Make sure that the CRCAPs do not remain a document of the MCs only, but are shared with other stakeholders. City Dialogues should ensure the ownership of the CRCAP with those external to the MCs such as the urban planning authority and state level agencies and should be carried out regularly.
- Set-up a monitoring mechanism not only for specific projects, but also for the full CRCAP, as foreseen in 'Step 6' of the ClimateResilientCities Methodology.
- Document the processes of how the cities developed the quick-win projects, and later-on to the bankable projects, including critical issues encountered during the projects
- Link successful solutions identified under the CapaCITIES project with the ongoing national initiatives to foster their dissemination.
- SDC should take a proactive role to coordinate the implementers' and the knowledge partners' roles in order to enhance knowledge circulation within Indian cities, and towards the upper political tiers.
- Encourage coordination meetings between Swiss experts (if there are going to be further missions of Swiss experts under the current phase).
- Make sure that the phasing-out of the project (when it happens) is carefully done, especially with regards to the know-how transfer in cities from project staff to city staff.
- Additionally, lay strong emphasis on dissemination of project results amongst the pilot cities and other Indian cities, as this is an important factor for potential replication of best practices.

#### **Main Recommendations for a potential Phase II**

##### **Intervention level:**

- Extend the intervention level from MC to include other administrative levels, mainly the regional planning authorities and the state level.
- Put focus on the dialogue between these levels.
- Establish closer links to the existing national support schemes
- Link activities under the CapaCITIES project with the ongoing national initiatives, or State or Regional Strategies, in order to strengthen relevance and ownership, and foster their dissemination.

##### **Geographic area:**

- Continue in the current cities with a lower intensity: Ongoing work should be completed, current pilot cities should share their experiences in peer-to-peer learning with other cities.
- Concentrate on cities in one or two states, and use the state level as entry point.

**Priorities**

- Simplify and add to the methodologies developed under Phase I, enabling also monitoring of the interventions with the same instruments (basket of solutions).
- Train stakeholders at several levels on integrated CC planning.
- Use Swiss experts to transfer the horizontally and vertically integrated way of city CC planning and focus also on process oriented knowledge transfer.
- Support the development of bankable projects in order to make direct impacts

**Organizational set-up recommendations**

- Recommend stronger joint decision making between Indian and Swiss experts on integrated urban planning, the selected activities, and their implementation for better coordination of the Indo-Swiss partnership.
- Look for a Project Leader with strong experience in integrated urban development.
- Make sure expertise on Adaptation in urban areas is adequately represented.
- Consider adapting the contractual issues to assure good cooperation between all actors, i.e. put all subcontractors on equal footage with the same 'line of command' to avoid sidelining.

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## **Acronyms and abbreviations**

AAQMS	Ambient Air Quality Monitoring System
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
CapaCITIES	Capacity Building for Low Carbon and Climate Resilient City Development Project
CC	Climate Change
CCMC	Coimbatore City Municipal Corporation
CRCAP	Climate Resilient Cities Action Plan (established under CapaCITIES)
DRR	Disaster Risk Reduction
EEA	European Energy Award
GPCCE	Global Programme Climate Change and Environment of SDC
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
MC	Municipal Corporation
MoU	Memorandum of Understanding
NGO	Non-governmental Organization
RMC	Rajkot Municipal Corporation
SDC	Swiss Agency for Development and Cooperation
SMC	Siliguri Municipal Corporation
SPV	Special Purpose Vehicle
SWM	Solid Waste Management

## **1. Introduction**

The Capacity Building for Low Carbon and Climate Resilient City Development Project (CapaCITIES) of the Swiss Agency for Development and Cooperation's Global Programme Climate Change and Environment (GPCCE), aims at strengthening capacities, showcasing concrete actions, and providing a platform to support meaningful bankable projects, related to Climate Change Mitigation and Adaptation actions in Indian Cities, and contribute to the policy dialogue on various tiers from local to global actors.

Through the CapaCITIES Project, GPCCE supports worldwide learning to accelerate action for sustainable urbanisation. Already today, cities account for approximately two-thirds of global energy use, and over 70% of energy-related greenhouse gas emissions that drive global warming. Rapid urbanisation in developing countries will result in additional massive energy requirements for economic activities, domestic use, infrastructure and services, putting city systems under pressure. This will be accentuated further by risks caused by climate variability, such as increasing heat stress, inundations, water shortages, and environmental health risks including air pollution.

CapaCITIES is conceptualised to support and accelerate the Government of India's own efforts for sustainable urbanisation, generate new scientific knowledge about the effects of climate change at the city level, strengthening capacities of municipalities to implement low carbon solutions, sound adaptation measures and risk management practices as well as disseminating lessons at the national, regional and global level. CapaCITIES is assisting City authorities in four partner cities: Coimbatore, Rajkot, Siliguri and Udaipur.

### **1.1. Review objectives**

The objective of this review is to assess the overall performance of the project, including the impact, outcomes, outputs, partnerships, processes, and opportunities for potential scaling-up (replication or broadening the scope of engagement) and to make recommendations for a potential next phase. The review will provide a critical external view on how the SDC funded CapaCITIES project is being implemented in the ongoing phase, its achievements, and improving the intervention strategy in the potential second phase of the project.

The review will provide insights into the effectiveness and efficiency of results, relevance and sustainability of the programme, together with lessons learnt and experiences gained in:

- Enhancing capacities of city authorities on climate change impacts, climate resilient development and plan for and implement mitigation and adaptation measures
- Implementing climate change mitigation and adaptation measures for priority sectors in the partner cities
- Raising awareness on low carbon and climate resilient city development in partner cities, between cities in India and other regional/global cities.; and
- Facilitating policy dialogue between cities and states.

### **1.2. Scope of work**

The review is based on a set of criteria prescribed by OECD viz. relevance, impact, effectiveness, efficiency, and sustainability. Based on these, the questions that the review focused on includes the following:



**Relevance**

- Is the project in line with India's national policies and programs (Smart Cities Mission, AMRUT, Swachh Bharat, India's NDCs)?
- Relevance of the project - with reference to GPCCE/ national context?

**Impacts**

- Impact of CapaCITIES at city level:
  - Has the project resulted in transfer of knowledge? Was downscaling of climate projections at city level done?
  - What type of institutional strengthening has taken place?
  - Technical assistance – what, by whom, and for what? – Indian, Swiss?
  - Were policy level dialogues initiated/facilitated – on what and how was it done?
- Has the capacity of city authorities improved?
- What has been the added value of the project? What has been achieved that would not have been achieved without the project?
- Has the project brought in innovations?
- What has been the experience with knowledge management (NIUA)- with what results?

**Effectiveness and Efficiency****Strategy**

- Has the capacity of the city to identify, prioritize and implement projects been enhanced?
- Are the priority sectors, design of quick-win projects and bankable projects suitable for the selected cities? Were they selected in consultation with relevant stakeholders in the cities? Have they been chosen according to the results of the analysis (GHG emission inventory/climate risk assessment)?
- Have the quick win projects achieved their goal and target?
- How are the technical assistance, quick-win and bankable projects linked? Is this approach relevant in the Indian context?
- Has there been any link of implementation actions with policies? How effective has this been?
- Are the outcome and outputs of the project as per the initial logframe?
- What monitoring mechanisms were used at different levels for project implementation and how effective and efficient have they been?
- Was having additional partners for knowledge management and complementary research work effective and with what results?

**Project Implementation Structure**

- Was the project implementation structure effective (Implementing agency (IA), knowledge partnership, pool of experts, city coach, city support staff, complementary research activities)?
- Was the team structure of the IA effective and cost efficient?
- What improvements are needed to make the institutional set-up of Implementing Agency more efficient?
- Were there personnel changes in the implementation agency team? If yes, what impact has this had on project implementation and coordination of project activities?
- Has the IA managed to bring Swiss expertise and Swiss technical knowledge into project design and implementation? How effective was this?

### **Sustainability**

- How sustainable are the strategies and approaches followed in Phase I of the project - on city level and on national level? Do these strategies have replication potential in other Indian/Asian cities and scaling up within the four pilot cities?
- How can the association of International/Swiss experts with city projects be sustained?
- How does the project promote climate resilient urban development in India and assist sustainable urbanization?
- How can the project engage more effectively with the national and state governments, private sector, and financial partners in order to reach sustainability?

### **Recommendations**

- Should the project strategy and approach remain the same or change?
- Should the thematic focus areas remain the same, be up-scaled, and replicated in other cities or new focus areas added that would help climate resilient development of cities?
- Should the main partners of the project remain the same - city level? Should other levels (state/national level) and other stakeholders (not only public but more private,) be included? Should the four pilot cities remain the same?
- How can CapaCITIES project influence the city development agenda?
- How can the visibility of SDC projects be enhanced in the next phase?
- Are there suggestions on improving the Implementation Agency structure?
- Should more institutions be involved in complementary research and knowledge sharing activities?
- What would be the most suitable/required levels of intervention (city, state, national, regional/global) in the next phase?
- What is the potential for further enhancing North-South, South-South and South-North Knowledge cooperation?
- How can CapaCITIES best contribute to global dialogue (climate resilient planning, capacity building and policy) and what suggestions can be given for partnership/ alliances that the second phase of CapaCITIES needs to enter into to achieve the desired results?

## **2. Programme background**

### **2.1. Project description**

The overall goal of CapaCITIES is to achieve a lower greenhouse gas emissions growth path, and to increase the resilience of selected Indian cities to the effects of climate change.

After a preparatory phase from October 2014 to May 2016, the project is currently operational (Phase 1: July 2016-June 2019; CHF 4'987'000). According to the Entry Proposal, a second phase is foreseen from July 2019 to mid-2022.

The project has been planned to reach 4 outcomes:

Outcome 1: **Capacities** of city authorities in four partner cities to plan and implement mitigation and adaptation measures are enhanced

Outcome 2: City level climate change **mitigation** measures for priority sectors initiated

Outcome 3: City level climate change **adaptation** measures for priority sectors initiated

Outcome 4: **Awareness** on low carbon and climate resilient city development is increased in India and other countries.

### **3. Method used**

The review is a qualitative assessment based on four main parts: (a) a documentation review, (b) inception report, (c) interaction with the main stakeholders and the implementation partners in Switzerland and India including several site visits and (d) the final report (the present document).

#### **3.1. Documentation review**

The first part of the work offered insight into the project and the objectives. The relevant project documentation received from the SDC was analysed (see list of available documentation in Annex A – Documents provided by SDC).

Second, an appropriate methodology for the review of phase I was defined. The chosen procedure was documented in the Inception Report.

#### **3.2. Inception report**

An Inception Report was delivered to the project team (SDC) on 16 January, 2019. The document included the chosen methodology to review phase I, which (as mentioned above) was first discussed and defined within the project review team.

#### **3.3. Interaction with stakeholders and partners**

To report about the interactions between the stakeholders and the project partners, interviews were conducted both in India and in Switzerland. A list of interviewed persons is given in Annex B and C.

The realisation of the interviews and site visits included the following steps:

- Kick-off meeting with SDC India
- Preparing Interview questions/ focus points (Annex D)
- Preparing list of meetings, interviews and site visits (Annex E).
- A debriefing meeting with the SDC India.
- The main activities during the review period are given in Annex F

#### **3.4. Final report**

The observations, analysis of the interactions of the review team, in India and in Switzerland, are summarised in the present final report. The project outcomes were compared to the initially defined goals with the designed indicators given in the log-frame (Annex G). A qualitative evaluation was performed. The questions about effectiveness, efficiency, relevance and sustainability of the project were answered. Recommendations to be considered for a proposed Phase II of CapaCITIES are given in Section 5 of this report.

In order to appreciate the four outcomes of the CapaCities project, the report needs to reflect the diverging pace and political situation in each of the cities. Hence, we chose to start the present report by a narrative on each of the Cities. Some redundancies in the subsequent chapters may result from this procedure.

#### **4. Review of CapaCITIES, Phase I**

##### **4.1. General Impressions for each City<sup>1</sup> (alphabetical order)**

In the federalist Indian political structure, responsibilities and competencies between political tiers are clearly delineated. Whereas in most states, cities have the responsibility over urban traffic management, street lighting, solid waste management, water supply and wastewater management for households, the responsibility of spatially related sectors (flood management, electricity provision, etc) relates to the state. Depending on the state and on the size of the cities, some cities have more responsibilities than others. The way the interactions between the states and the cities is handled, varies largely from one state to another. In addition, the planning authority for the municipalities is not a part of the City Government, nor the Municipal Corporation, but it is a separate Unit (Urban Development Authority) which was not involved in the CapaCITIES structure. The planning unit is, inter alia, the unit competent for sectors covering a perimeter surrounding the City. It is important to note that the CRCAPs developed under the project provide very useful information on the responsibilities of each city in each sector.

Many national schemes are available to cities which give technical and/or funding support to actions in the field of climate mitigation and adaptation. These include the Smart Cities Mission, AMRUT, National Clean Air Programme, Swachh Bharat (Clean India) Mission, Solar City Programme, Housing for All initiatives etc.

##### **Coimbatore**

- Coimbatore is a Smart City under the Smart Cities Mission. The city is also implementing other Government of India programmes such as AMRUT and Swachh Bharat Mission. Projects under the CapaCITIES project have been selected by CCMC keeping in mind the other programmes being implemented in the city.
- CCMC does not have an elected body at present.
- The Tamil Nadu State Action Plan for Climate Change (TNSAPCC) is looking at effects of climate change including sectors relevant for urban-rural interactions, and urban development, and describing interventions by sector and sub-sectors attributed to line departments, and finance structures. The TNSAPCC is referenced in the CRCAP.
- The visit to Coimbatore included the projects Ambient air quality monitoring stations (AAQMS), Sunya (zero waste project) with segregated waste collection, Biomethanation plant and Micro composting centre (both under final stages of construction), waste dumping site at Vellalore having waste treatment and material recovery activities, biomethanation plant, and vermicomposting centre. An official meeting was held with the Executive Engineer, CCMC.
- The CRCAP has not yet been ratified in Coimbatore.

##### **Rajkot**

- Rajkot is a city under the Smart Cities Mission, and benefits from AMRUT and Swachh Bharat Mission (SBM) support too (among others).
- Gujarat issued the State Action Plan on Climate Change in 2014
- Rajkot appeared to be a very dynamic city, eager to advance the climate relevant development issues. RMC Commissioner, as well as several city officials, seemed to be very competent and dynamic as well.

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<sup>1</sup> Note: Only the city of Udaipur was visited by all three reviewers. The assessment of the other Cities relies on the visit of one review team member, desk reading, and interviews.

- Rajkot is planning to establish a Climate Change Cell in RMC to act as a think tank for the city on climate change issues. Gujarat state already has a Climate Change Department at the State Government level.
- RMC officials are looking at the SDC funded BEEP and CapaCITIES projects in an integrated way and are taking ideas from both the projects for their social housing projects. For instance, in their ‘Smart Ghar 3’ project, RMC is looking at thermal comfort, energy saving, and also looking to install Solar PV on rooftops (through a possible PPP model). The integrated thinking in RMC is because of the dynamism in the MC (as mentioned above).
- Visit to Rajkot included the projects Solar PV at Aji Water Treatment Plant, Solar PV in Social housing, Groundwater recharge system, and AAQMS. It also included official meetings with the Mayor, Commissioner, Deputy Municipal Commissioner, and City Engineer (Housing).
- Rajkot Municipal Corporation (RMC) is making provision in the municipal budget for projects from CRCAP
- The CRCAP yet to be ratified by the RMC Council

#### **Siliguri**

- Siliguri is not a part of the Smart Cities Mission, but receives support from AMRUT. The SAPCC of West Bengal of 2012 has been updated in 2018 in collaboration with IIT Bombay.
- The city is currently facing shortage of funds due to certain political problems.
- Visit to Siliguri included the projects AAQMS, Sunya (zero waste project) with segregated waste collection, and visit to composting centre at the dumping site. It also included meetings with the Mayor, Municipal Commissioner, Deputy Municipal Commissioner, Sub-Assistant Engineer (Water), a Member of Mayor-in-Council and a Ward Councillor.
- Siliguri has ratified the CRCAP, and is planning to make provisions in the budget to fund projects from CRCAP
- A copy of the CRCAP has been handed over to the State’s Principal Secretary (Urban), and also to the State’s Minister for Urban Development.

#### **Udaipur**

- Udaipur runs activities under the Smart Cities Mission, and some exchange of expertise was mentioned to take place between responsibilities of this Mission and the CapaCITIES project. Udaipur is also implementing other national programmes such as AMRUT and Swachh Bharat Mission (SBM).
- The Rajasthan State Level Climate Change Action Plan was finalised in 2014.
- The review team could not meet with the Municipal Commissioner due to his recent transfer to another city. A short telephone conversation was held instead.
- The visit to Udaipur included the projects Sunya with segregated waste collection, view of the former dumping site, AAQMS, ride on e-rickshaw and official meeting with the Mayor and the Additional Division Engineer.
- According to our observations, the responsibilities of the Mayor are rather restricted due to the limited functions given to the Udaipur Municipal Corporation by the State Government, and hence his focus was largely on solid waste management and traffic management within the City perimeter. The collaboration with Switzerland was mentioned to be important, however, the process of setting up a CRCAP did not seem to be visible to the Mayor (the City Dialogue had not yet taken place at the time of the visit).

#### 4.2. Outcome 1: Capacities of city authorities in four partner cities to plan and implement mitigation and adaptation measures are enhanced

The paramount activity under this outcome was to set up tools, and provide training, as part of the ClimateResilientCities methodology, to facilitate the Climate Resilient Cities Action Plans (CRCAP) for each of the cities. The stakeholder dialogue is meant to increase awareness on climate-related issues, and discuss options to act within the cities for their Climate Resilience (while GHG emissions, as well as Adaptation needs are tackled).

##### Achievements

- **Climate Resilient Cities Action Plan (CRCAP)**, based on climate profiles, that have been developed and agreed in all four cities. As of 31 January 2019, it was ratified by the City Council only in Siliguri. In order to develop the CRCAPs, about 20 tools for **planning, implementing** and **financing** have been developed by ICLEI (CRCAP methodology). Where the CRCAP has been ratified, the city has committed to annual GHG emission reductions until 2022-2023 as compared to the GHG emission baseline (in 2015/2016). All the municipal budgets have now allocated/going to allocate funds for climate mitigation and adaptation projects for the next year.
- In all four cities **trainings** have been carried out for city officials and other stakeholders on (1) the CRCAP methodology and (2) sector/subject specific topics, like e.g. SWM. The topic of the sector specific trainings depended on the topics of the projects in each city.
- In Rajkot, a **climate change cell** is proposed to be set up. (It is hard to say how much this has been triggered by the project and how much by other factors. However the project has for sure added to this).
- Learnings of the project related to the CRCAP have been included in the Climate Resilient Cities **Methodology**, used by ICLEI in their work with cities on global level. The main aspect that has been added through the project is the climate adaptation/climate resilience aspect which was not considered by the tool earlier. Meanwhile, this new aspect has already been fully implemented in the tool on a South-East Asian scale; on a global **scale**, currently a decision by the global ICLEI Board is pending.

##### Positive aspects

- The CRCAPs are the first action plans in India at municipal level **combining climate mitigation and adaptation** aspects which strengthen the message to cities that adaptation projects should be addressed as well.
- The CRCAPs have been developed in close collaboration between ICLEI and city staff and in consultation with a large stakeholder group and therefore presents **high level of legitimacy**. Additionally, the CRCAPs (at least GHG part) are very **evidence based** documents. Thanks to this, the CRCAPs provide a very good basis and **present good arguments** (e.g. GHG emissions to be saved, vulnerable population to be addressed) for discussions with additional stakeholders, also on state or national level. For instance, in the case of Siliguri, the CRCAP has been transmitted to the state government in order to trigger funding.
- The CRCAP has a horizon of several years and has clearly defined interventions and is therefore a **good document for mid-term decisions** by the cities to implement further climate related projects (including co-benefits other than the directly climate related benefits) after the end of the project.
- The **municipal commissioners** have **highly appreciated** the CRCAP as it has helped them to look at the climate change topic in an **integrated manner**. Discussions with officials also indicated that the mind-set of (some) city authorities, especially in Rajkot (and Coimbatore), has changed positively. The capacity to integrate climate change aspects into projects and to have a holistic view has enhanced. However this capacity seems to have been enhanced mainly at higher level (sometimes only at the level

of the commissioner). On sectoral level, the technical assistance provided under the project seems to have enhanced the capacities at lower level too, e.g. at engineering level.

- The idea of the climate change cell in Rajkot may act as a good example for other cities
- The integration of new (climate adaptation) aspects in the ClimateResilientCities Methodology automatically ensures a **certain diffusion** of the know-how on **regional** (South-East-Asian) or even global scale (see also Outcome 4).

#### **Weak aspects, challenges**

- The project clearly has some **delays** resulting in a situation where the potential of the CRCAPs has not been fully exploited yet. This is mainly the case in cities where a city dialogue has not yet taken place (e.g. Udaipur) and the CRCAP is widely unknown to city representatives.
- The preparation of the CRCAPs (and also the implementation of quick-win projects – see also Outcome 2 and 3) are **strongly in the hands of ICLEI** representatives in the cities. This may add to the fact that the CRCAP might not be very well known to some city officials.
- Even though the CRCAPs include adaptation aspects, the adaptation aspects in the city planning and the intervention plans are not as well developed as the mitigation aspects. Out of the four priority sectors (Waste & Wastewater, Transport, Building and Water) mainly the solid waste, water & wastewater projects feature co-benefits related to water management and flood prevention (drainages and waterways are kept clean, and clogging is prevented, through rigorous waste collection/water leakages detected/water recharge through infiltration).

The **weaker focus on adaptation aspects** might be due to several reasons:

- The MCs are not responsible for spatial city planning, a very important area for adaptation actions. Since CapaCITIES chose to work directly with the Cities, other actors such as the Urban Development Authorities, or the State level authorities, have, to our knowledge, not been involved in the planning of project priorities.
- There are not always immediate benefits of adaptation actions for the MCs (e.g. no financial benefits like with many mitigation actions, only if drought or flooding happens, benefits show), and therefore, they are not a priority for the MCs.
- Several aspects of adaptation require actions at a larger perimeter than only the City perimeter which is under the responsibility of the City Government/Municipal Corporation. Working beyond the City Perimeter was not planned in CapaCITIES.
- Adaptation needs related to health and well-being (heat islands, diseases, etc) have not been raised, possibly because of the four priority sectors determined by the project.
- The Swiss Implementing Agency having a stronger qualification in ‘mitigation’ rather than in adaptation could also be an additional reason.
- While the vulnerability analysis is well done for all the different wards of a city, the **interventions proposed in the CRCAP** do not reflect these different vulnerabilities and **do not prioritize actions in the most vulnerable wards**.
- The preparation of a CRCAP is a very **complex and time consuming** process (a lot of data collection with many entities), which might not be undertaken by an MC without external support. It is also a task that is beyond the mandate of MCs. This fact limits the potential replication of CRCAPs in other cities (unless there are again other projects/donors strongly supporting this work).
- Also, the intervention plan (as part of the CRCAP) seems to be a bit too complex and **not enough hands-on** in order to really give strong guidance to city officials as to what should be implemented, what actions should be prioritized, etc.
- The capacity building impact expected through the preparation of the CRCAP is difficult to assess. We were under the impression that the complexity of the CRCAP and the ClimateResilientCities

Methodology with its over 20 tools is too high in order to allow for solid training in such a short time. In addition, the process was clearly led by ICLEI, not allowing local governments to fully learn the process 'on the job'.

- The enhanced capacities of municipal commissioners on looking at climate change in an integrated manner has **not yet trickled down to other levels (e.g. engineer level)** in all cities. Furthermore, the vision is often restricted by the functions the MC performs (e.g. no vision on spatial planning as this is being dealt with on regional level).
- **Monitoring and reporting systems** for the CRCAPs as a whole (not for specific projects) have not been institutionalised (yet).

#### Relevance

- The awareness on CC in Indian cities and the Indian population is currently at a rather low level, this holds especially true for the climate adaptation aspect. **Awareness raising on CC topics** in general is therefore **very relevant**; to do this first with city authorities and city officials makes sense as from there it can spread to the general population.
- Many of the **main responsibilities of MCs have a climate change aspect**: e.g. street lighting, SWM, water, sewage. It is therefore important that MCs are aware of CC and know how to address these issues. However, the responsibilities of smaller MCs, or MCs in certain states, are very limited (to only a few tasks), meaning that it would be relevant for other entities, levels of administration to improve their capacities in the field of CC.

#### Impact

- The impact of the project on **improved capacities** seemed to be **different in different municipalities**. For instance, Rajkot seemed to be more knowledgeable and felt that their mind-set had changed. They 'proved' this, for example, with the social housing scheme where a holistic view has been applied, also making a close link between the BEEP project and CapaCITIES. In other cities, such as Udaipur, the improved capacities seemed to be mainly in specific sectors and not on a cross-sectoral level.

#### Effectiveness and efficiency

- The **CRCAP is an effective document**, if used as a document for understanding the climate impact of sectors, understanding interactions of sectors, planning of most effective measures, and understanding co-benefits, looking for finances and integrating it in the State Action Plans on Climate Change (SAPCCs), NDC implementation etc.
- The **CRCAP is not a binding document** - cities have no obligation to prepare such a plan. Hence, it must be assumed that the CRCAP will not be prepared, if not funded by external sources.
- The CRCAPs are mainly targeted at the MCs, however as stated earlier, the MC's responsibilities are limited. It can be questioned if the MC alone is the right level of intervention or if **other administrative levels would have to be involved** in order to really see a strategic change in the city planning.
- Even though the CRCAPs present a very good basis for decision making in the middle-term, the same result- a sound list of climate mitigation and climate adaptation interventions that could be undertaken in the next years – might have been achieved through a **less time and resources consuming methodology** (e.g. a list of guiding qualitative questions/basket of solutions in order to assess where the city stands and where it still needs to improve).
- The Swiss experts have not been involved a lot in the set-up of the CRCAPs (only at the beginning when defining the methodology). The know-how and **experience of Swiss experts** in city planning **could have added** to make the CRCAP more integrated and a real planning tool with a short and long-term vision.



### Sustainability

- As the CRCAPs are addressing several years, they will also serve as a **good basis on a mid-term**. However, it needs to be assured that the CRCAPs are really owned and used by the cities and do not end-up forgotten after the end of the project.
- Through the **change of mind-set** of certain city representatives some sustainability will be reached as this is unlikely to change back again. Even if the commissioners (where most change of mind-set seems to have occurred) are transferred, they will carry this know-how along.
- The **driving force** behind the CRCAP is the **ICLEI staff** 'seconded' to the local governments. Sustainability and durability will, to some extent, depend on the willingness of the local governments to **retain these persons** in their pay roll.

### Recommendations for the remainder of the phase I

- The CRCAPs should not remain a document of the MC only, but should be shared with other stakeholders concerned with the CC issues of the city. City Dialogues may ensure further ownership on the CRCAP of several stakeholders within the MCs and external to the MCs. Important stakeholders to be addressed outside the MCs would be the **urban planning authority** and also the state level where a lot of interactions are necessary to implement important CC actions. It should be aimed at not only having one city dialogue but having **regular dialogues/meetings between all the concerned stakeholders/entities**.
- To really make the CRCAP a guiding document and not have it ending-up stored unused, the main city officials working on CC related projects should be trained on the CRCAP and how to use it (also after the end of the project) as a guiding document for decision making and daily work and take a **holistic view** on the projects they are dealing with. A **monitoring mechanism**, not only for specific projects, but for the full CRCAP should be set-up, as foreseen in 'Step 6' of the ClimateResilientCities Methodology. Therefore the intervention plan might have to be further broken-down into a **short-term, hands-on intervention plan** with clear responsibilities, deadlines, etc. The Core Group in the cities established under the project (maybe enhanced with further stakeholders from outside the MCs) could act as a responsible body for monitoring, where city officials would have to report to. It might also be an option to form Climate Change Cells as planned in Rajkot (see also recommendations for the next phase.)

### 4.3. Outcome 2: City level climate change mitigation measures for priority sectors initiated

Please note: Many of the evaluations of outcome 2 are also valid for outcome 3, therefore, they are not mentioned twice, but only in outcome 2.

### Achievements

- The city level climate change mitigation measures have been classified in four categories: 1) technical assistance; 2) training; 3) quick-win; and 4) bankable projects. **Quick-win projects** in the field of climate change mitigation have been **carried out in all four cities**. The full list of all the implemented trainings, technical assistance and quick-win projects is given in Annex H.

The review team has visited several quick-win projects. An **assessment of each visited quick-win project (positive aspects, challenges)** is listed in Annex I. The general appreciation of the mitigation quick-win projects follows in the next paragraphs.

- For each of the finalized quick win projects a fact sheet has been published.

### Positive aspects

- It is very positive that the SDC project has **implemented** quick-win projects. This was highly appreciated by the pilot cities as several other donor projects 'only' deliver reports.
- The quick-win projects are '**spark**' projects (according to Rajkot) that have sparked a change in the mind-set. The projects compliment the efforts of the MCs and provide new perspectives. They build on the efforts of MCs and strengthen them.
- The cooperation with Swiss and Indian experts ('on-the job training') seemed to be the main driver for **improved capacities of the city engineers** on a concrete **technical level**.
- Through the Technical Assistance several **sector wide reports** are now available which cover many more activities than were dealt with in the course of this project. These reports are a **basis for future actions** also after the end of the project.
- The Technical Assistance managed, in certain cases, to **directly influence ongoing activities** of the MCs, e.g. some additional technical criteria have been taken up in the commissioning of a sewage treatment plant.

### Weak aspects, challenges

- Due to time constraints, the selection of quick-win projects was **not based on the in-depth analysis** done for the CRCAP nor the **results from the Technical Assistance** by Swiss experts.
- There has been **only little to no coordination and communication among the Swiss experts** (before, during or after their missions to India), nor has there been a lot of communication between the Swiss experts and the MCs after their mission. Mostly, they do not know if and how their recommendations have been taken up in the interventions plans, etc.
- There are **no bankable projects ready** so far.
- The **factsheets** on the quick-win projects do **not address critical issues or difficulties** encountered during the project. For instance, all the open questions and critical aspects of the e-rickshaw project in Udaipur remain unmentioned, which gives a wrong impression of the project and might lead other governments taking ill-informed decisions.

### Relevance

- The know-how on purely technical solutions might be available with Indian experts. However, the MCs often lack the ability of **thinking a project from A to Z** which is crucial for a project to run in the long-term. For the waste sector this means e.g. to be aware of the social questions in waste segregation, to plan and design the waste processing plants in the right places (including avoiding too long transportation routes), to define feasible operational and financial (e.g. PPP) models and to assure the maintenance of the project through training of the operator's staff. The project has brought this thinking to the MCs.

### Impact

- **Direct GHG emission and energy savings** can clearly be expected to result from the mitigation quick-win projects.

### Effectiveness and efficiency

- Most of the quick-win projects seem to have been carried-out in a very **straightforward and efficient way**.
- The use of Swiss experts might have been even more effective and efficient if they would have been coordinated better (some exchange among them before their missions to the pilot cities) or if they would have had a little bit of extra time to train Indian experts in their respective sectors.

- Not all the quick-win measures have proven to be effective. However, this lies to a certain degree in the nature of quick-win projects which often serve as **pilot projects to test new approaches**.

#### **Sustainability**

- The sustainability of the implemented quick-win projects will depend a lot on the **maintenance of the projects** (see recommendations) in order to run in the long-term.
- For some quick-win projects there is a very high **potential for replication and scaling-up**, be it in the same city or in other cities. For the replication of the quick-win projects in other cities it will be necessary to further facilitate the exchange among cities (see also outcome 4).

#### **Recommendations for the remainder of Phase I**

- It should be made sure that the initiated quick-win projects are **brought to a successful close**. Additionally, there should at least be one bankable project ready per pilot city to show the cities how to get there.
- The processes of how the cities got to the quick-win, and later-on even the bankable projects, they should be **properly documented** from A to Z in order to replicate this later in other projects/cities.
- The **monitoring and reporting** for all implemented quick-wins should be assured (e.g. AAQMS: calibration of the sensors for quality control of the measurements; SWM: monitoring of achieved segregation rates in the respective wards).
- There should be further evaluation and subsequent actions of the **air quality data** which is being monitored in all cities, thanks to the project. In order to do this it might prove necessary to strengthen the capacities on this specific topic through training. It would be good and could be very beneficial to link these actions to the Indian Clean Air Mission.
- For **dissemination of experiences** with the quick-win projects it would be helpful to make an overview table with all quick-win projects implemented, including a **rough evaluation/rating of the quick-win projects** according to categories like: 'Complexity', 'Up-scaling potential within the cities', 'Replication potential in other cities (India)', 'Replication potential in other cities (global)', 'Potential for bankability'.
- For further missions of **Swiss experts** (also under the potential next project phase) there should be greater **prior communication and coordination** among them in Switzerland in order to make the most of their missions and afterwards with the cities, so that they may also give some further, very specific inputs to follow-up activities. It should always be checked if their presence in India could be used for training of Indian experts.
- Regular coordination meetings among the involved Swiss Experts should be held, for fostering of synergies, and allowing for mutual information on planned interventions, as well as quality control. Such coordination meetings among experts could also give support to the dialogue among the Swiss and Indian project leaders.

#### **4.4. Outcome 3: City level climate change adaptation measures for priority sectors initiated**

##### **Achievements**

- In two of the four pilot cities (Rajkot and Siliguri) the **quick-win projects**, which can be classified as targeting **mainly climate change adaptation** have been carried out. Please note: Several mitigation quick-win project have also an adaptation aspect (e.g. SWM and sewerage projects), however they are only listed under Outcome 2.  
An **assessment of each visited quick-win project** (positive aspects, challenges) **is listed in Annex I**. The general appreciation of the adaptation quick-win projects follows in the next paragraphs.

### Positive Aspects

- Adaptation interventions have been identified **based on the functions and responsibilities of the MCs**, and in line with **existing planned projects** in the cities.
- The project has been working in sectors that have been asked for by the MC and they **address their most urgent needs**, even if this meant that not many projects have been carried out in adaptation.
- The quick-win adaptation projects will have both **short and long-term impact on cities**.
- The adaptation projects address the most critical sector that will be impacted by CC in future, which is **water**.

### Weak aspects / challenges

- Adaptation measures have **not** been initiated **in all cities**.
- Some proposals have been made by Swiss experts regarding adaptation projects (e.g. management of water upstream in Siliguri), but were not retained for implementation. The reason for this might be that the area is **beyond the perimeter of the MC**.
- The **urban planning unit**, which would have some of the major scope of actions for adaptation measures, is not a part of the MC.
- In some cases, Swiss Technical Assistance brought very concise sectoral advice to a project. However, the knowledge could only be transferred to ICLEI staff, given the **lack of adequate expertise** within the city government.

### Relevance

- The project provides no clear working definition of the understanding of 'resilience', 'climate resilience' and 'adaptation'. Hence, assessing the relevance of activities in Outcome 2 remains somehow descriptive.
- The elements described in Outcomes 2 and 3 with respect to 'adaptation' issues are very meaningful, as improper drainage, congested or leaking waterways contribute to loss of water, or congestion and risk of flooding. Cities are **regularly affected by these challenges**, and **properly addressing** them is an element in cities being able to face increased hydrometeorological events under a changing climate scenario.
- In order to properly address issues of risks of flood and drought, it is not sufficient to look at the perimeter of the MC. **Surrounding areas must be included** in the assessment of risks and planning of meaningful measures for resilience to CC.
- Given the early decision to work on the four sectors Waste and Wastewater, Buildings, Transport and Water, some potential quick-wins related to **other sectors** (health impacts of heat, green space, etc) was **not considered at all**.

### Impact

- The adaptation quick-win projects that have been carried out contribute to **water saving and safeguarding scarce water resources** (ground water).
- Waste collection **reduces clogging of pipes and waterways**, which is particularly important in case of heavy rainfall.

### Effectiveness and efficiency

- see Outcome 2
- As mentioned under challenges, one major player in adaptation – the urban planning unit – has not really been addressed by the project making it difficult to implement many of the pure adaptation measures (hazard and risk mapping, green/wind corridors in the cities, etc.)

#### **Sustainability**

- see Outcome 2

#### **Recommendations for the remainder of the phase I**

- see Outcome 2

### **4.5. Outcome 4: Awareness on low carbon and climate resilient city development is increased in India and other countries**

#### **Achievements**

- **City Climate Profiles** for all cities were prepared and **published** on the project's website.
- In two cities – Coimbatore and Rajkot - **city level dialogues** were conducted.
- The **ClimateResilientCities methodology** was developed/further improved (see also outcome 1), published and circulated in various stakeholders' workshops, and city governments' programmes.
- The first '**Best practices' workshop** to exchange experiences between the pilot cities and with other Indian cities took place in January 2019.
- Experiences and findings of the project have been presented at several **international conferences** (e.g. Vietnam, Freiburg (DE), Sri Lanka)).
- **Visit of project city officials to Switzerland** was organised by the Implementing Agency.
- Several meetings between project partners and national public or private partners have taken place trying to disseminate the idea of an '**Indian Climate Change Award**' (a system of guiding questions/indicators (basket of solutions) which serves as analysis and also as basis for rating/awarding) and link it to national missions (e.g. Smart City mission with its Liveability Index)

#### **Positive aspects**

- There have been certain **links between the pilot cities**: e.g. the AAQM stations were requested by Rajkot at first, afterwards this quick-win was replicated in the other cities.
- **First effects on national policy** can be observed: Based on the climate change interventions made by SDC's CapaCITIES and BEEP projects in Social Housing, the national level "Housing for All by 2022" mission is likely to incorporate climate change aspects in future constructions. This was triggered after the Secretary, Ministry of Housing and Urban Affairs, Government of India, visited Rajkot's social housing projects in December 2018.
- Results of the project (adaptation part) have been included in the ClimateResilientCities Methodology, used by ICLEI in their work with cities at global level. Through this, there is a chance that some of the projects results will be disseminated globally.

#### **Weak aspects / challenges**

- So far, **knowledge sharing amongst the four cities has been weak**.
- NIUA's role as **knowledge partner** has **not yet been realised fully**. This might have been induced by the complex organisational set-up and unclear roles for this outcome (see also organisational set-up).
- The dissemination of the project results **outside India** has mainly been done by ICLEI, resulting in relatively **low** visibility for the project and the Swiss involvement.

#### **Relevance**

- There are **many Indian cities** in the same size range as the pilot cities, confronted with very similar challenges. It could be very beneficial to them to be able to **get access to and replicate** some of the findings of the project.

#### **Impact**

- Awareness on CC and quick-win projects has increased amongst **some city stakeholders** due to workshops held.
- The Best Practices workshop has helped knowledge exchange on projects amongst partner cities and other non-project cities as well.

#### **Effectiveness and efficiency**

- **NIUA has not been very effective** in its role as a knowledge partner e.g it did not take a lead role in the Best Practices workshop. Apart from this workshop hardly any activity has taken place on India level to disseminate the project results to other cities, therefore no statement on the effectiveness/efficiency is possible.
- The international dissemination of project results through **ICLEI's network** seems to be quite **efficient** as relates to content. However, there is the disadvantage of losing visibility for the project/SDC (see also weak aspects).

#### **Sustainability**

- With the activities carried out so far under Outcome 4, hardly any sustainable results in other Indian or international cities could be expected.

#### **Recommendations for the remainder of the phase I**

- In order to assure awareness raising in other Indian and foreign cities, **more exchange between the cities** should be established.
- Communication on the Climate Resilient Cities Methodology, improved by the project, should always and prominently include **credits to the support by SDC**.
- The successful solutions identified under this project should be **linked with the ongoing national initiatives** to foster their dissemination.

### **4.6. Activities / contract with NIUA**

#### **Achievements**

- Two City Level Dialogues have been organized in Rajkot and Coimbatore; one Best Practices workshop held in Delhi.
- A visit has been made by NIUA to Siliguri to improve knowledge about project activities for preparing thematic brief.

#### **Positive aspects**

- City Level Dialogues brought together **stakeholders from different backgrounds** - government, corporators, resident welfare associations, NGOs, Academia, Industry representatives, CPR, IIHS etc.
- Best Practices Workshop enabled dissemination of project findings also to **cities not directly involved** in the project

#### **Weak aspects / challenges**

- NIUA's activities were dependent on the project activities of the implementing agency. Any **delay** in completing project activities has delayed NIUA's follow-up activities. NIUA could organize only two City Level Dialogues till September 2018 as CRCAPs for Siliguri and Udaipur had not been finalized.
- Issue briefs, thematic briefs and policy briefs have not yet been finalized (as in January 2019).
- NIUA has not been able to deliver its commitments fully as yet (as in January 2019).
- No visible steps have been taken to initiate policy level dialogues as yet.

#### **Relevance**

- NIUA's role as a knowledge partner is very important for **creating and disseminating knowledge**. NIUA is also strategically placed to influence policies at the national government level.
- Knowledge about CapaCITIES projects, as also of CRCAPs, needs to be shared between project cities, the state governments as well as the national government.

#### **Effectiveness and efficiency**

- In our opinion, NIUA has to be **more proactive** in its role as a **knowledge partner**. NIUA's engagement with cities for producing knowledge products needs to increase.

#### **Recommendations for the remainder of phase I**

- NIUA should **complete all its commitments** on City Level Dialogues, workshops, preparing issue briefs, thematic briefs and policy briefs. All these knowledge products must be shared on CapaCITIES website and also on Smartnet.
- One **National Level Urban CapaCITIES Dialogue** must be held, which will provide a platform for policy makers, practitioners and cities to discuss approaches, new developments, challenges and solutions relevant to urban climate resilience. It would also present key approaches and solutions adopted in quick-win projects/interventions under CapaCITIES project.

#### **4.7. Contract with additional experts and research institutions**

##### **Achievements**

- The following papers have been developed in the course of the project:
  - Low Carbon Resource Efficient Affordable Housing (Ashok Lall & Architects)
  - Integrating Energy and Climate Objectives in Indian Cities (Centre for Policy Research)
  - Gender Mainstreaming in Urban Infrastructure with special focus on Transportation (Independent Consultant)
  - Migration, Livelihood Trajectories and Climate Resilience: A case of select medium-sized Indian cities (Indian Institute of Human Settlements)
  - Supporting Sustainable, Resilient and Climate Sensitive Infrastructure Development in India (Global Infrastructure Basel Foundation)

##### **Positive aspects**

- Some (academically) very **interesting findings** have resulted.
- For some papers, the findings have **influenced the interventions in the pilot cities**. This is e.g. true for the recommendations for social housing (linked to the BEEP project) which seem to have been used as guidelines for recent social housing projects in Rajkot.

#### **Weak aspects / challenges**

- The **link to the main project components** (under the contract with South Pole) is **very weak** for some of the papers. Several core project partners (mainly in Switzerland) are not even aware of the existence of these papers.
- The paper on 'Gender issues' has not been presented at all to e.g. the cities.

#### **Relevance**

- The review team considers the collaboration with think tanks and independent experts or research institutions as a highly interesting element that may contribute to the **improvement of understanding** of sustainable urban development in all aspects of sustainability (social, economic, environmental).

#### **Effectiveness and efficiency**

- In order to create a real value added from such papers, the **role within the project, target and target audience, and modalities for coordination** and exchange must be well thought through and contractual arrangements found.

#### **Recommendations for the remainder of the phase I**

- In parallel with other dissemination activities (city dialogues, best practice workshops), also **disseminate the papers** prepared under the project and the findings in these papers. Put a focus on the findings and topics most relevant to the cities.

### **4.8. Organisational setup of the project**

#### **Description of the organisational set-up**

The main contractor is the Swiss-based *South Pole*, with *econcept* and other Swiss experts as subcontractors. The main Indian partner *ICLEI*, as well as other Indian experts, are also subcontracted from South Pole.

Additional contracts have been issued directly from SDC India, for instance to the National Institute for Urban Affairs (NIUA) as a knowledge brokering partner, and other Indian experts, research partners and think tanks for conducting specific thematic studies.

#### **Positive aspects**

- The **South Pole** Group pools **highly reputed expertise** related to low carbon development. Thanks to its closeness with the private and the public sector, as well as the civil society, South Pole is a credible partner for the project providing a large network of experts.
- ICLEI is a Global Network, counselling over 1500 cities worldwide in questions related to sustainable urban development. In the CapaCITIES Project, ICLEI South Asia has the main responsibility of Strategic Planning, Capacity Building, and Implementation of projects in the four project Cities. ICLEI provides a **remarkable access to local governments** and is recognised as a **very solid partner** for providing expertise, and conducting entire implementation processes from planning, procurement, execution and follow up. ICLEI was lauded by the Swiss experts as much as by the local Indian representatives met by the review team.
- **Working relations** between South Pole and ICLEI are **good** and on a friendly basis (after initial discussions at the beginning of the project which have been settled in the meantime). Regular phone calls support project implementation.
- **Excellent Swiss Expertise** was pooled through experienced subcontractors.



### Weak aspects / challenges

While the review team got the impression that the implementing partners in Switzerland and in India provide solid competences, some shortcomings were noted.

- Expertise of Swiss partners: South Pole, econcept and GIB as well as other experts are all well reputed for their expertise in low carbon development and co-benefits with other environmental issues. The review team is under the impression that **adaptation was less of a strength** on the Swiss partners side. This said, it must also be noted that the activities of the CapaCITIES Project are limited to the functions of the municipal bodies, hence, providing limited options to work in spatially relevant adaptation endeavours (see also outcome 3).
- **Team Lead:** The team lead of the overall implementing structure has changed a couple of months ago from A. Lüchinger to H.P. Egler. All Swiss subcontractors deplored that the depth of interactions was reduced with this shift. The evaluation team got the impression that the new team lead was **managing the project as an administrator rather than as an expert**.
- **Cooperation among Swiss implementers and experts:** Experts (Swiss subcontractors) worked individually, in their field of expertise, with **no further interaction with the pool of experts**. Coordination meetings to plan for concerted actions or jointly monitor progress did not take place.
- Position of Indian partner: ICLEI is a very well established partner in India, with strong acceptance at the level of local governments. In the planning and implementation of projects at local governments' level, ICLEI takes a strong lead and manages the overall process. The review team got the impression that ICLEI **somewhat substitutes the local governments** (which may partly be due to the frequent changes in responsibilities of civil servants and elected government) rather than contributing to capacity development.
- Cooperation among partners on the Indian side: We had an excellent impression of the additional knowledge and research partners. However, we observed that the main Indian Partner, ICLEI, did not readily share information, and was **not too eager to concert with other partners**, which makes it difficult for the additional partners to make an impact.

### Effectiveness and efficiency

- The main implementing partner in India, ICLEI, is a solid implementing partner, leading processes from A to Z and also providing technical expertise from its own team.
- Regarding coordinating role of SouthPole, and provision of international expertise: the review team considered the Swiss support to be slightly scattered. **Coordination** (through e.g. biannual coordination meetings) among Swiss experts would have enhanced the overall coherence of Swiss support and overview of activities, as well as discussion of effectiveness of the expert input. A table of the Swiss expert missions is given in Annex J.
- Indian beneficiaries **acknowledged the expert inputs** from ICLEI and from Switzerland.
- The review team observed that the expected value added from the Swiss Expertise, namely the integrated urban planning and coordination across sectors, was not at the forefront of the Swiss support. We would have expected a stronger role of Switzerland in supporting and negotiating the CRCAP as an overarching, integrated planning document which could also be used as a basis for monitoring 'Climate Resilience' activities.
- Swiss Experts in several instances did **not get the occasion to verify the quality of documents** and implementation that was elaborated based on their initial input. Quality Control is fully in the hands of ICLEI.
- The value added expected from the additional knowledge and research partners could not be made fully valid. These partners are mandated by separate contracts from SDC, and hence report to a different 'line of command' than the experts linked to the SouthPole contract. In the current phase, this setup was not sufficiently fruitful.

#### Recommendations for the remainder of the phase I

- As a follow up of the Best Practices Workshop (end January 2019), **SDC should take a proactive role to coordinate the implementers'** and the knowledge partners' roles in order to enhance knowledge circulation within Indian cities, and towards the upper political tiers.
- **Coordination meetings between Swiss experts** should be encouraged (if there are going to be further missions of Swiss experts under the current phase).

#### 4.9. Overall assessment of Phase I

The CapaCITIES Project is a very **comprehensive project**, ranging from cross-sectoral analysis (CRCAP) and pilot projects (Quick Wins) to the scaling up through bankable projects. Doing so, linking the analysis to selecting most relevant action (in a given context) to financing aspects provides a proof of concept with a very high value of **showcasing that (small) concrete projects can contribute to achieve 'Climate Resilience'**.

Phase 1 was scheduled to be a rather short phase. Not surprisingly, the planned activities could not be achieved fully. We are of the opinion that a very high value of the project's achievement so far is to showcase that **concise measures can be successfully be undertaken within the perimeter of the MCs, even with restricted range of responsibilities** (such as the functions of the MC level vs the state level), and that these activities can contribute to multiple aims including 'Climate Resilience'. As such, the project makes a very valuable proof of concept for GHG reduction and (partly) resilience in urban areas.

The choice of CapaCITIES to work on the **level of the cities/MCs was right**, considering the relevance of urban settings with respect to climate impact and resilience issues. Yet, planning for climate resilience requires integrated planning beyond the city boundaries, which requires the **inclusion of urban planning/development units or state level involvement**.

The selection of the four main sectors 'Waste and Wastewater', 'Water', Transport' and 'Buildings' (and 'Air Quality') is meaningful within the perimeter of the cities. The **integration of the four sectors in an overall sustainable and low carbon city development** which is resilient to hydrometeorological risks (potentially enhanced through Climate Change) is reflected in the **CRCAP**. The value of the CRCAP as a document for planning (also on a day-to-day level) and monitoring 'sustainable urban development' has potential to be strengthened. Although the CRCAP is not a mandatory document in India, city representatives valued it as a helpful document. When thinking of replicating and scaling-up such a planning methodology, the financial and personal resources and capacities needed, have to be related to the available resources in the MCs and possible standardization and simplification (at least for smaller cities) have to be considered.

The value added of the **Swiss Technical Assistance**, in our view, is to advise on solutions with an integrated view, i.e. to embed possible solutions in the overall, current city context. We got the impression that the Swiss advice was very relevant for the **development of specific sectors**, but **too limited** (short assessment missions, no support during implementation and quality control, no quality check of CRCAP and implementation decisions) for reaching the goal of supporting and even institutionalizing integrated planning.

The project made some efforts to foster peer learning among cities and include additional cities (not currently included in the CapaCITIES project) in such exchanges. The sharing of experiences through a knowledge partner such as NIUA or Research Partners (CPR) has great potential to **support the learnings**

**across cities, and towards different tiers of government;** yet, we observed that the knowledge exchange was somewhat hampered by project delays and lack of cooperation between Indian implementing actors.

Some Indian states and their cities are clearly more proactive and dynamic in fostering sustainable and resilient urban development. Yet, there is considerable merit in also supporting cities in less advanced states to showcase the feasibility of concrete action.

## **5. Recommendation for a potential Phase II of CapaCITIES**

CapaCITIES is a very good initiative to showcase practical solutions for low carbon development and resilience, making the proof of concept of possible action in the given Indian context. The review team recommends to continue the project in a second phase, by considering a number of suggestions based on our observations.

### **5.1. Recapitulation of the Indian context and challenges**

- The tasks and responsibilities of MCs do not englobe all relevant functions of a city. Depending on the state, the **responsibilities of MCs are more or less restricted**. Mainly, the **state level and the urban planning unit** (which is anchored at a regional level) also perform basic and important tasks, many of which are relevant for moving towards climate resilient cities.
- **Many national schemes** are available to cities which **give technical and/or funding support** to actions in the field of climate mitigation and adaptation. These include initiatives such as the Smart Cities Mission, AMRUT, National Clean Air Programme, Swachh Bharat (Clean India) Mission, Solar City Programme, and Housing for All by 2022.
- Many of these initiatives do not provide funding directly to the MC, but rather route it either through a **Special Purpose Vehicle (SPV)** or through the state government. The team of reviewers got the impression that the capacities, the available financial resources and the organizational set-up of MCs, especially with frequent changes at higher levels of staffing, meant that MCs are not able to implement somewhat bigger and more complex projects. Almost no big projects go through the 'normal' administrative procedures of the MC (corruption might add to this). This is probably especially valid for smaller cities.
- **Main priority for cities is not climate change**, but rather specific sectors like solid waste management, water, wastewater and street lighting as these are the core tasks of the cities enshrined in the Acts under which they function.

### **5.2. Recommendations for a potential Phase II of CapaCITIES based on the Indian context and the learning from Phase I of the project**

**The review team recommends the following:**

#### **Level / geographic area to work with**

- Phase II should no longer purely focus on the Municipal Corporations, but should also include the state level and urban planning units at the regional level (e.g Urban Development Authorities). Special focus should be given to the interaction and dialogue between these different levels, aiming for a full horizontal and vertical integration.
- Continue in the current cities with a lower intensity. Ongoing work should be completed. It should be assured that the CRCAP is well understood as a planning tool and used for decision making.

- Try to expand from the existing cities to other cities of the same state (peer learning through city-to-city dialogue), to regional level and even to the state level (**bottom-up approach**)(component 1).
- Apply also a **top-down approach** (component 2), using the state level as entry point. This approach might allow to give the necessary mandate (to act and collaborate) and support (financial and technical) to MCs in order to plan and implement climate resilient development in an integrated manner.

As funding of the next phase probably will not allow for being active in four states, a maximum of two states could be selected, from the current already involved states, where the top-down approach can be applied. Selection criteria to be further analysed may include (1) level of responsibilities of the MCs in the states, (2) level of dialogue between different administrative levels, and (3) level of commitment to CC aspects at the state level.

### Topics/Sectors

- To continue keeping **cities as the main beneficiaries** of the project. Their main priorities, and therefore potential incentives to get their commitment, are the four sectors of phase I: Waste, water, wastewater and transport. Within these sectors, the cities could look for co-benefits like wellbeing, high level of services, financial saving, etc. than the environmental improvement and climate change aspects. By showing that these co-benefits most likely will materialise through integrated urban planning, including climate mitigation and adaptation aspects, should be the main story line.
- Establish closer links to the **existing national support schemes**. Some support schemes may 'only' be used as funding mechanisms, other schemes which are still under development/are still being adapted, e.g. the Smart Cities Mission or the National Clean Air Programme, might be looked into deeper and a dialogue started on successful aspects of the CapaCities project that could be integrated into the national scheme.
- Request a working definition for the terms used in the CRCAP, particularly for 'Resilience', 'Climate Resilience', 'Integrated Risk Management', 'Adaptation', to allow for a clear attribution of activities and indicators. We suggest to follow the glossary of terms provided by UNISDR.

### Organizational set-up for the project's Phase II

- Better coordination of the Indo-Swiss partnership: Recommend stronger **joint decision making** between Indian and Swiss experts on integrated urban planning, the selected activities, and their implementation. Accordingly, recommend a stronger presence of Swiss experts for joint activities with Indian (peer) experts. Also recommend a stronger role for Swiss experts in the overall project coordination and quality control. Swiss experts might also have to step-in when the Indian partner, ICLEI, has not enough incentives to make a methodology simple and lean for cities, instead of additional consultancy.
- Recommend **stronger coordination of activities on Swiss side**, with, e.g., biannual coordination meetings among project lead, technical experts, and city planners.
- Look for a **Project Leader** with strong experience in integrated urban development.
- Consider adapting the contractual issues to assure good cooperation between all actors, i.e. **put all subcontractors on equal footage** with the same 'line of command' to avoid sidelining. Try to prevent limited cooperation between different Indian partners through giving them the same contractual framework put them at the same level, e.g. have all the Indian partners as subcontractors of SouthPole.
- Consider **enlarging the members of the Steering Committee** by involving decision-makers from different tiers of government, as well as a stronger presence of Swiss experts (as guests, according to the discussed topic).

- Stronger guidance: **SDC India** might have to be a **strong link** between the partners to assure smooth cooperation for better results.

#### Global dimension

- To use international and multilateral fora and instruments for sharing identified solution 'globally'.

### 5.3. Details of potential project components for a potential Phase II of CapaCITIES

#### 1. Activities at city level

- **Improve methodologies from phase I:** Continue the idea of converting the experiences that Phase I of the project made with the CRCAP, technical assistance, quick-win and bankable projects into a basket of solutions. The basket of solutions is a list of qualitative or quantitative guiding questions within their scope of actions, allowing cities to (1) analyse their current status of development, (2) give them ideas of where and how to improve, and (3) monitor their improvements. Consider strengthening the participation of Swiss Urban Planners in making the CRCAP methodology simple and replicable, and providing counselling regarding interaction of sectors, and policy choices.
- **Find arguments for cities** to take the effort to prepare a comprehensive plan (through identification of low hanging fruits, achievement of co-benefits, access to funding from national schemes - thanks to well prepared portfolio), and call it City Benefit Intervention Plan/City Resilience Plan (used in State Action Plans on CC).
- **Support cities with process oriented and/or technical assistance:** Different intensity of support could be offered to different types of cities. Frontrunner cities, which already have a cross-sectoral team (e.g. Climate Change Cell, involving also the urban planning unit), a strategy and an action plan (simplified CRCAP), could profit from smaller technical assistance to transform their planned projects into bankable projects. Smaller, less advanced cities could be offered support from consultants to help them set-up cross-sectoral core team and develop the strategy and the intervention plan - thanks to a simplified CRCAP/ basket of solution methodology. Consultants could be present in the cities for the first few months on a full-time basis, afterwards slowly reducing their time of on-site engagement.
- **Fully integrate urban planning unit in order to focus equally on climate adaptation:** Many adaptation topics are linked to urban planning (e.g. prevention of flooding, heat islands). An interesting new area of activity for MCs could be 'greening of cities'. Under this topic, mapping of natural assets can be undertaken which will include mapping green and blue assets. This will create carbon sinks and address urban heat island impacts. Greening of cities would also connect with the National Clean Air Programme. Mapping blue assets and designing actions for them will help in long term sustainability of water resources in cities.
- **Synergies with ongoing activities and missions:** Encourage Municipal Commissioners to convene regular coordination meetings for assessing the status of implementation of projects and their position with respect to the implementation of CRCAPs, or possible alignment with requirements in CRCAPs. In doing so, a coherent approach to sustainable urban development can be assured by the MC, and synergies, including financing, can be identified and managed.
- **Mobilise the current pilot cities** to share their experiences in peer-to-peer exchange events with other cities, be it from the same states, or from other states, focusing on cities of similar size.

#### 2. Activities at state level

- Give **governance and policy support to state level** in order to follow-up on their key priorities and actions identified for urban development in their **State Action Plans on CC** or to implement their

**responsibilities to India's Nationally Determined Contributions (NDCs)** that have been transferred to the State level.

Possible actions could include:

- Set up a support system, assembling instruments developed under CapaCITIES (e.g. basket of solutions at state level).
- Give mandate/incentives to the MCs to develop integrated CC planning systems/actions.
- **Select cities** with the support of state so that the cities benefit from these state actions.
- Organize **training** and awareness raising at state level for different administrative levels:
  - Urban climate change curriculum for training of MC officials
  - Have training modules/site visits in the cities
  - Provide 'hands on' training for engineers

NIUA, with its strong links to state level training institutions can be involved in this activity.

### 3. Activities at national and global level

- Consider the right multilateral initiatives to best disseminate the project findings and results on global level:

#### Nationally determined contributions (NDCs)

- The responsibilities for monitoring NDCs and taking actions are in many countries broken down from national to the regional to the local level. However, the capacities and know-how from state down to local level usually decreases and there is not as much support to local level as there is to national level.
- A focus of CapaCITIES Phase II on a vertical dialogue and support between the different administrative levels might be showcased on global level.

#### Global Covenant of Mayors (GCoM)

- Launching event for GCoM South-East Asia on 5 May 2019 in New Delhi, so far only about 8 Indian cities have joined (the city of Rajkot being one of them)
- ICLEI as partner of the Global Covenant of Mayors
- Global Covenant of Mayors puts strong focus on commitment and reporting, and not that much on supporting cities with project implementation
- A focus on implementation (action plan – pilot projects- bankable projects) aspects could be brought in by CapaCITIES project

#### Sustainable Development Goals

- Contribution to SDG 7 “affordable and clean energy” and to SDG 11 “sustainable cities and communities”
  - Collaboration with SECO
- SECO has mandated several city projects, linked to the European Energy Award ‘philosophy’, in the last years. These are located in: Albania, Colombia, (Romania), (Serbia), Tunisia and Ukraine.
- Currently, they are all linked to the ‘European Energy Award’ - ‘family’.
- There could be exchange of experiences and discussion on options to commonly improve global outreach of these projects.

The review team is of the view that the above recommendations will help the potential Phase II of CapaCITIES project to go from city level to state, national and global levels.

## 6. ANNEXES

### 6.1. ANNEX A – Documents received from SDC and studied

	Document	Details
<b>Project Documents</b>		
1	Terms of Reference (ToR)	
2	Credit Proposal no. 7F-09012.01.02	CapaCITIES: Implementation (Contract between SDC and South Pole Carbon Asset Management Ltd., Zurich)
	Minutes of Steering Committee	SCM3 Minutes SCM3_Annexure 1_Tools_CCAP 180215_Project review SCM4 180222_CapaCITIES minutes_SCM4 CapaCITIES SCM5 Minutes_Final CapaCITIES_SCM6_29Jan2019(1) CapaCITIES_SCM presentation_14Aug2018
	Operational and Financial Reports	CapaCITIES_IA_Annual Report 2016-2017 CapaCITIES_IA_Annual Report 2017-18_approved NIUA Op rep 1 NIUA Op rep 2 NIUA Op rep 3
	Operational and Financial Reports - Consultants	170201 Alall op rep 1 170503 Alall op rep 2 170522 CPR Op rep 1 170707 Alall Position Paper_final 170707 Alall Rajkot_Gujarati_Pamphlet 170707 Alall Rajkot_Pamphlet 171130 CPR Op rep 2 171227 Rajkot Transport report 171227 Siliguri Transport Report 171227 Transport Overview report India Mission 171227 Udaipur Transport Report 180913 GIB Guidance Checklist 180927 IIHS_Migration_Amir A Housing Study ALP_Report 1 Jan-Jun 2018 GIB Op Rep 1 Dec 2017 GIB Op Rep 2 May 2018 IIHS_City_Report_Coimbatore
	Project documents and contracts	A Housing contract ALP Signed Amendment 1-ICLEI-22.11.2018 ALP Signed contract ICLEI 18.12.17 CPR Signed Contract Gender signed contract GIB Signed contract 07.04.2017 IIHS Signed contract 14.08.2017 ITPI signed contract NIUA signed Contract
	Project documents and contracts - Consultants	170818 Approved TA 4 CapaCITIES
	Events	<u>Launch event Udaipur:</u> 170317 Agenda launch event 170317 Article CapaCITIES launch

	Document	Details
		170317 CapaCITIES Introduction launch <u>Local Renewables 2018</u> 181016_CapaCITIES Participant List LR2018_Session_Minute to Minute Programme-22.10.18 Program Delegation to Germany and Switzerland
	Others	Bankable project strategy paper Review BEEP final report_20160701
	Publications	170725 CapaCITIES Factsheet 171030 Abstract Gender Report 171030 Final Gender Report 180215 CapaCITIES Factsheet Best practice CapaCITIES textes 181123-fnr CapaCITIES brochure CapaCITIES Factsheet Coimbatore_City Profile Quickwin Projects - Coimbatore_AAQMS Quickwin Projects - Coimbatore_SUNYA Quickwin Projects - Siliguri_Acoustic Quickwin Projects - Siliguri_AAQMS Quickwin Projects - Udaipur_E-rickshaw Quickwin Projects - Udaipur_SUNYA Quickwin-Projects-Rajkot_AAQMS Quickwin-Projects-Rajkot_Aji Solar Quickwin-Projects-Rajkot_Ground-Water-Recharge Quickwin-Projects-Rajkot_Solar-PV-Social-Housing Rajkot_City Profile Siliguri_City Profile Story of an E-rickshaw driver_V4
	CRCAP	2018.07.27_CRCAP_siliguri CRCAP_Udaipur_12012019 Final CRCAP_Coimbatore_31.7.2018 Final_CRCAP_Rajkot_21.7.2018



## 6.2. ANNEX B – Interviews in Switzerland

Meeting Partners	Participants
10 January 2019 (Zürich)	
South-Pole	Mr. Hans-Peter Egler (Co-project leader)
Econcept	Mr. Reto Dettli
11 January 2019 (Zürich)	
PLANAR AG (phone call)	Mr. Bruno Hösli

## 6.3. ANNEX C – Interviews in India

Meeting Partners	Participants
24 December 2018 (Delhi)	
ICLEI (Preliminary meeting)	Mr. Emani Kumar (Co-Project leader), CapaCITIES city coaches
08 January 2019 (Rajkot)	
Rajkot Municipal Corporation	Mayor, Ms. Beena Acharya
	Mr. Banchhanidhi Pani, Municipal Commissioner
	Mr. Chetan Nandani, Deputy Municipal Commissioner
	Ms. Alpana Mitra, City Engineer (Housing)
14 January 2019 (Delhi)	
CIFF	Mr. Shirish Sinha (formerly with SDC)
National Institute of Urban Affairs	Mr. Anand Iyer
ICLEI	Mr. Emani Kumar (Executive Director, ICLEI), Soumya Chaturvedula (Rajkot City Coach), Ashish Rao Ghorpade (Udaipur City Coach), Bedoshruti Sadhukhan (Coimbatore City Coach) and Monalisa Sen (Siliguri City Coach)
15 January 2019 (Udaipur)	
Udaipur Municipal Corporation	Mr. Arun Vyas, Additional Chief Engineer, (previously Superintending Engineer)
	Mr. Sidharth Sihla, Former Municipal Commissioner (Telephonic interview)
16 January 2019	Mayor, Mr. Chandra Singh Kothari
17 January 2019 (Delhi)	
South-Pole	Mr. Palash Srivastava
Centre for Policy Research	Mr. Ankit Bhardwaj
25 January 2019 (Siliguri)	
Siliguri Municipal Corporation	Mr. Sonam Wangdi Bhutia, Municipal Commissioner
	Mr. Shubhdeep, Sub-Assistant Engineer (Water)
	Dr. Shankar Ghosh, Member, Mayor-in-Council
	Mr. Saptarishi Nag, Deputy Municipal Commissioner
	Ms. Snigdha Hazra, Councillor Ward No. 2
04 February 2019 (Coimbatore)	
Coimbatore City Municipal Corporation	Mr. Saravana Kumar, Executive Engineer
NGO	Ms. Menaka, President, RWA, Ward No. 22

#### 6.4. ANNEX D - Focus of Interview Questions

The questions asked during the interviews focused on the following:

- Overall assessment of CapaCITIES project
- Positive and negative aspects of the project
- Prioritization and selection of quick-win projects
- Benefits accrued to the city from quick-win projects
- Opinion about implementing agency and its staff – their role and capabilities
- Problems faced in implementing projects, if any
- View on Technical Assistance from Swiss experts – benefits to MC
- CRCAP – its knowledge and benefits to MC
- Monitoring of CRCAP and actions taken on CRCAP
- Vision for Phase II – upscaling existing projects, new thematic areas

#### 6.5. ANNEX E – Site visits in India

<b>Rajkot 07 January 2019</b>
Visit to Quick-win projects - Solar PV at Aji Water Treatment Plant, Solar PV in Social Housing, Groundwater recharge stations, ambient air quality monitoring stations (AAQMS)
<b>Udaipur 15- 16 January 2019</b>
Visit to Quick win projects - SUNYA in Ward 1 and 41, original bimethanation plant site, Tethardi landfill site, AAQMS at Udaipur Municipal Corporation, e-rickshaw visit and ride in e-rickshaw in old city
<b>Siliguri 26 January 2019</b>
Visit to Quick-win project SUNYA in Ward No. 2. , Compost centre at the main dumping ground in Ward 42, AAQMS at Siliguri Municipal Corporation
<b>Coimbatore 4-5 February 2019</b>
Visit to Quick-win projects - SUNYA project in Ward No. 22, bimethanation plant and micro composting centre (both under construction) at Farmers market in Ward no. 23, landfill site at Vellalore, vermi-composting centre at Vellalore, AAQMS at Coimbatore City Municipal Corporation

#### 6.6. Annex F - Main activities during the Review period

Date	Activity	Deliverable
20.12.18	Kick-off web meeting between SDC team and the review team	
21.12.18 - 14.1.19	Desk review	
08.01.19 and 10.01.19	First interviews in India (Rajkot) and Switzerland	
14.01.19 to 18.01.19	Mission review team in India (Delhi/ Udaipur)	
16.01.19	Submission of Inception report	Inception report
25 & 26.01.19	Interviews in India (Siliguri)	
28.01.19	Debriefing web meeting with SDC	
01.02.19	Debriefing meeting with IA	PPT Presentation
30 & 31.01.19	Attended Best Practices Workshop at Delhi to get additional information on the project	
04.02.19	Further interviews in India (Coimbatore)	
19.02.19	Further interviews in Switzerland (experts)	
24.01.19, 12.02.19 & 26.02.19	Telecon discussion amongst review team	
28.02.19	Draft Final report submission (for SDC comments)	Draft Final Report
22.03.19	Submission of Final Report	

## 6.7. Annex G - Defined Goals with designed indicators of CapaCITIES Project

Goal	Indicators
<b>Impact (Overall Goal)</b>	
Lower greenhouse gas emissions growth path achieved and resilience to climate change increased in select Indian cities	<ul style="list-style-type: none"> <li>- Avoided GHG emissions</li> <li>- Vulnerabilities of cities reduced</li> </ul>
<b>Outcomes &amp; Outputs</b>	
1. Capacities of city authorities in four partner cities to plan and implement mitigation and adaptation measures are enhanced	<ul style="list-style-type: none"> <li>· Low carbon and climate resilient measures integrated into city planning</li> <li>· Volume of funds applied for and leveraged for implementation of climate actions</li> </ul>
<b>For Outcome 1: Capacities of city authorities in four partner cities to plan and implement mitigation and adaptation measures are enhanced</b>	
1.1 Climate profiles elaborated for four partner cities	<ul style="list-style-type: none"> <li>· Climate scenarios developed for each city</li> <li>· Risk assessment for each city prepared</li> <li>· Emissions scenarios prepared for each city</li> </ul>
1.2 Tools for city level mitigation and adaptation planning and financing developed, applied and officials trained	<ul style="list-style-type: none"> <li>· Number of planning instruments adapted and developed for mitigation and adaptation</li> <li>· M&amp;E system to track the implementation of climate measures developed and in use</li> <li>· Number of city authority officials trained</li> </ul>
1.3 City Climate Action Plans prepared for partner cities and agreed	<ul style="list-style-type: none"> <li>· Number of mitigation and adaptation actions and measures identified for each partner city</li> <li>· Recommendations of the City Council Meeting</li> </ul>
2. City level climate change mitigation measures for priority sectors initiated	<ul style="list-style-type: none"> <li>· Number of beneficiaries from the implementation of quick-win projects</li> <li>· Funding for long term sectoral mitigation measures applied for and allocated</li> <li>· Regulatory measures accepted and endorsed by city authorities</li> </ul>
<b>For Outcome 2: City level climate change mitigation measures for priority sectors initiated</b>	
2.1 Sectoral mitigation measures identified for priority sectors (buildings, transport/mobility and solidwaste/sewage)	<ul style="list-style-type: none"> <li>· Emissions reductions opportunities mapped</li> <li>· Mitigation measures shortlisted, prioritised and categorized (quick-win/long term bankable projects/policy)</li> <li>· Policy documents developed -</li> </ul>
2.2 Quick-win projects implemented and bankable project prepared for mitigation actions in priority sectors	<ul style="list-style-type: none"> <li>· 1-2 quick-win project proposals developed for each city</li> <li>· Quick-win projects operational</li> <li>· 2-3 bankable project proposals developed for each city and potential funding sources (public, private and multilateral) identified</li> <li>· Funding requests prepared as per the guidelines</li> </ul>
2.3 Regulatory measures prepared in priority sectors	<ul style="list-style-type: none"> <li>· Revised/new policies, guidelines, etc. drafted and submitted to city authorities</li> </ul>
2.4 Training courses to build human and institutional capacity for sectoral actions developed and training delivered	<ul style="list-style-type: none"> <li>· Sectoral training needs mapped</li> <li>· Training programmes designed and conducted</li> <li>· Number of city level sectoral trainings delivered</li> <li>· Number of officials from sectors trained</li> </ul>
3. City level climate change adaptation measures for priority sectors initiated	<ul style="list-style-type: none"> <li>· Number of beneficiaries from the implementation of the quick-win projects</li> </ul>

Goal	Indicators
	<ul style="list-style-type: none"> <li>· Funding for long term sectoral adaptations/ resilience measures applied for and allocated</li> <li>· Regulatory measures accepted and endorsed by city authorities</li> </ul>
<b>For Outcome 3: City level climate change adaptation measures for priority sectors initiated</b>	
3.1 Sectoral adaptation actions identified for priority sectors (water and natural disaster management)	<ul style="list-style-type: none"> <li>· Resilience/adaptation opportunities mapped</li> <li>· Adaptation measures shortlisted, prioritised and categorized (quick-win/long term bankable projects)</li> </ul>
3.2 Quick-win projects implemented and bankable project prepared for adaptation actions in priority sectors	<ul style="list-style-type: none"> <li>· 1-2 quick-win project proposals developed for each city</li> <li>· Quick-win projects operational</li> <li>· 2-3 bankable project proposals developed for each city and potential funding sources (public, private and multilateral) identified</li> <li>· Funding requests prepared as per the guidelines</li> </ul>
3.3 Regulatory measures prepared in priority sectors	<ul style="list-style-type: none"> <li>· Revised/new policies, guidelines, etc. drafted and submitted to city authorities</li> </ul>
3.4 Training courses to build human and institutional capacity for sectoral actions developed and training delivered	<ul style="list-style-type: none"> <li>· Sectoral training needs mapped</li> <li>· Training programmes designed and conducted</li> <li>· Number of city level sectoral trainings delivered</li> <li>· Number of officials from sectors trained</li> </ul>
4. Awareness on low carbon and climate resilient city development is increased in India and other countries	<ul style="list-style-type: none"> <li>· Inter-city, national, regional and international learning links established</li> <li>· Interest expressed by other cities in India and other countries</li> <li>· Recognition of best practices, processes and approaches by national missions/programmes and international initiatives</li> <li>· Number of people reached through knowledge exchange and dialogues</li> <li>· Number of targeted knowledge products to decision make</li> </ul>
<b>For Outcome 4: Awareness on low carbon and climate resilient city development is increased in India and other countries city development is increased in India and other countries</b>	
4.1 Knowledge and best practices on integrating climate measures in urban planning are transferred to four Indian partner cities	<ul style="list-style-type: none"> <li>· Best practices, case studies/success stories and database for advanced technical solutions/technical experts compiled and learning documents made available</li> <li>· Thematic events on guidelines, standards and frameworks conducted</li> <li>· Number of city dialogues on thematic and sectoral issues organized</li> <li>· Study tour to Switzerland and China organised</li> <li>· Manuals, guidance notes (methodology tool kit, sectoral planning integration) and training materials published</li> </ul>
4.2 Learning among the four Indian partner cities is facilitated	<ul style="list-style-type: none"> <li>· Knowledge portal and platform developed, maintained and running</li> <li>· Number of best practices workshops organized in partner cities</li> <li>· Number of thematic issue briefs prepared</li> </ul>

Goal	Indicators
	<ul style="list-style-type: none"> <li>· Project learning workshop conducted</li> </ul>
4.3 Project experiences disseminated to Indian cities and cities in other countries	<ul style="list-style-type: none"> <li>· Number of thematic policy notes/briefs based on project lessons documented and inputs to national missions and programmes provided</li> <li>· Range of knowledge products developed periodically (annual newsletter) and disseminated widely</li> <li>· International workshop organised</li> <li>· Number of relevant events at which experiences were shared to a global audience (e.g. Transformative Action Programme event at COP, Resilient Cities [Global and Asia- Pacific], City World Congress, etc.)</li> </ul>

## 6.8. Annex H - Quick-Win Projects

### Coimbatore

#### Mitigation projects

- **SUNYA - Towards Zero Waste**

This project has been implemented in two Wards - Ward no. 22 and 24. The implementation of waste segregation at source in these two Wards has been completed. However, the biomethanation plant (in Ward 23) being implemented under CapaCITIES project was still under construction in the first week of February 2019.

- **Ambient Air Quality Monitoring Station (AAQMS)**

Four sensor based particulate matter monitors monitoring PM 2.5 and PM 10 have been installed under the project. While the real time data was being made available to the MC, there was a problem with feeding real time information on the display panel during the time of visit in the first week of February 2019.

### Rajkot

#### Mitigation projects

- **Renewable Solar PV at Aji Water Treatment Plant**

The Aji water treatment plant has been converted into a renewable energy based plant by deploying a 145 kWp solar PV system, of which 70 kWp has been funded under the CapaCITIES project. This project has been completed and the PV system is fully operational.

- **Solar PV in Social Housing**

This project has implemented a rooftop Solar PV system in a social housing scheme having 74 housing units. Residents have been trained to clean and maintain the solar panels.

- **Ambient Air Quality Monitoring Station (AAQMS)**

Two sensor based particulate matter monitors monitoring PM 2.5 and PM 10 have been installed under the project and the data is relayed to the RMC Integrated Command and Control Centre.

#### Adaptation project

- **Ground Water Recharge System**

Four of the five groundwater recharge structures have been constructed. The construction of one is delayed due to technical reasons, which are being resolved.

### Siliguri

#### Mitigation projects

- **Ambient Air Quality Monitoring Station (AAQMS)**

Four sensor based particulate matter monitors monitoring PM 2.5 and PM 10 have been installed under the project. The digital display board at the SMC administrative building continuously displays the data from all the four sensors.

- **SUNYA - Towards Zero Waste**

This project covers two Wards - Ward no. 2 and 17 where source segregation of household waste has been implemented. Two dustbins of two different colours have been provided to the households from project funds. The efforts made under the project have resulted in even motivating the low income households to segregating waste at source.

#### Adaptation project

- **Acoustic Water Leak Detection and Water Audit**

Two acoustic water leak detection machines have been provided to the city and these are being used by the engineers who have been trained to handle the equipment and conduct water audit

## **Udaipur**

### Mitigation projects

- **E-Rickshaw Pilot for Udaipur**  
Under the project, 18 e-rickshaws of various types were procured and their performance tested on city roads. It was found that the e-rickshaws were not entirely suitable for the terrain of the city and due to various other reasons they were not fully successful. The city is now considering the option of e-autos instead.
- **SUNYA - Towards Zero Waste**  
This project has been implemented in two Wards - Ward no. 1 and 41. The households in these Wards are successfully segregating waste at source. However, some local customs and traditions (such as feeding the cows) does create some problems in some areas. The waste, though is being collected in a segregated manner, is being dumped together as the decentralized biogas plant has not been constructed as yet due to some legal problems relating to the land.
- **Ambient Air Quality Monitoring Station (AAQMS)**  
Four sensor based particulate matter monitors monitoring PM 2.5 and PM 10 have been installed under the project. A digital display board has been installed at the UMC building which continuously displays the data from all the four sensors.

## **TECHNICAL ASSISTANCE PROJECTS**

### **Coimbatore**

- Strategic Action Plan for Waste Water Management and Treatment
- Assessment of Catchment Area of Singanallur Lake to determine relevant technology for treating the water before it enters the lakes to reduce pollution.
- Engineering Plan for Movement of Waste allowing for its scientific closure -Technical Advice for Overall Planning of the Dumpsite at Vellalore
- Development of a Long-term SWM Strategy for the City as a holistic internal planning and monitoring document

### **Rajkot**

- Potential for electrification of and last mile connectivity along the Bus Rapid Transit (BRT) corridor
- Preparation of Integrated Solid Waste Management Action Plan for year 2030

### **Siliguri**

- Pre-feasibility Study to Assess the Viability of Partial Closure of the Existing Dumpsite and Exploring Alternatives
- Pre-feasibility Study to Assess the Viability of Operationalizing a Mass Public Transport System

### **Udaipur**

- Scientific Assessment and Analysis for Effective Waste Water Management in Udaipur and Guidance on Tender Preparation –Guidelines and recommendations for enhancement of proposed wastewater treatment in new STPs (40 MLD)
- Solutions and Recommendations for the Scientific Closure of Tithardi Dumpsite (with Landfill Gas Estimation and Guidance on Tender Preparation)
- Development of City Level Low Carbon Intermediate Para Transit (IPT) Action Plan and Financing Proposal



## **SHORTLISTED BANKABLE PROJECTS (currently being developed - as in February 2019)**

### **Coimbatore**

- Framework for engagement of a private agency for operation of micro-composting units in the city
- Preparation of a ToR for selection of a partner agency for E-waste management at the city level

### **Rajkot**

- Framework for engagement of an agency for implementation of electrification of BRTS Corridor and to provide last mile connectivity through cycle sharing and electric rickshaws in the city
- Framework for engagement of an agency for rooftop solar PV installation for existing and proposed affordable housing schemes

### **Siliguri**

- RDF Pelletization at existing dump-site
- Implementation of biodigester based public toilets in a slum

### **Udaipur**

- Large scale financing of e-autos
- Framework for engagement of an agency for city-wide implementation of the SUNYA project

## **TRAININGS**

- Training on CRCAP Methodology in all four cities
- Training provided to municipal staff on waste planning and landfill waste movement in Coimbatore
- Training on the SUNYA approach given to urban local bodies' representatives from Tamil Nadu and Karnataka
- Training on monitoring Solar PV installation at Aji WTP to RMC officials and to residents at the affordable housing scheme in Rajkot
- Training on water leak detection provided to city engineers in Siliguri

## 6.9. Annex I: Assessment of projects visited in the pilot cities

### Mitigation projects

#### Coimbatore

- **SUNYA - household waste segregation in Ward 22:** The waste in this ward is segregated at source and also collected in a segregated manner. People were made aware/educated on waste segregation and the collection process. ICLEI, along with the MC, worked with the residents for a few months, and later the residents' welfare association volunteers also helped in educating and motivating residents.

#### Positive aspects

- All those involved in the waste segregation project consider themselves as members of a 'team'. The team consists of MC, ICLEI, sanitation staff, volunteers and local NGO. A Whatsapp group has been formed for this purpose so that all involved are always connected and this helps in promptly attending to problems.
- Removing waste dumps and planting trees in cleared spaces has been very beneficial and is aesthetically pleasing. The project to the city that cleaning up of areas that had waste dumps earlier can make areas green, create economic opportunities, and that the success of efforts requires local community organisations' participation
- Bins were not provided to households from the SDC project. Households used their own bins for waste segregation.
- Wet waste in the Ward is collected six days a week and dry waste once a week.
- This ward also has a separate e-waste collection container kept in a central park in the ward.

#### Weak aspect, challenges

- The process of waste segregation needs to be strengthened in the low income areas of the Ward, where segregation is not being done fully yet.

- **Biomethanation plant** (under construction) and **Micro composting centre** in Ward 23: This biomethanation plant is under construction in the Farmers vegetable market in Ward 23. The segregated waste available from this market and also the segregated waste brought from Wards 22 and 24 will be partly used in the biomethanation plant and part of the waste will be composted in the adjoining Micro Composting Centre (next to the biomethanation plant, which is also under construction).

#### Positive aspects

- The location of the biomethanation plant and the micro composting site at the Farmers vegetable market (in Ward 23) is strategic. It will reduce transportation cost of waste collection from the vegetable market and the segregated waste will also be directly available for processing. Segregated waste from the project Wards (22 and 24) will also be brought here.

- **Landfill site at Vellalore:** The Vellalore landfill site spread over an area of around 650 acres. The Vellalore landfill site processes waste, makes manure and refuse derived fuel (RDF). It also processes plastics and makes them into cakes for reuse. There is a materials recovery facility, a biomethanation plant and also a vermicomposting centre in this landfill site.

#### Positive aspects

- A master plan for this dump site has been prepared under the CapaCITIES project to deal with the vast quantities of waste brought to this landfill site.
- Closure of the landfills is also happening in this dump site.
- Vellalore also contains a sanitary landfill.
- The activities in this landfill site look to be sustainable.

#### Rajkot

- **Solar PV on Aji Water Treatment Plant:** On the water treatment plant a 145 kWp grid connected (high tension line) solar PV system has been installed (70 kWp financed by the project, 75 kWp financed by RMC), which covers around 18% of the plant's yearly electricity demand.

#### Positive aspects

- The project is only the second project all over India that has proven the feasibility of connecting such a big PV plant to the grid and directly feed into a high-tension line (a fact which had been strongly doubted before).
- Even though the project is at a too early a stage to be sure about the payback time of the project, it seems like the payback period will be even shorter than expected.
- With 46 other water and drainage pumping systems operated by RMC, the replication potential of the project is very high. RMC has already started activities in this direction.
- The installation and maintenance of PV systems is being tendered out to one contractor for a full year (even without knowing the exact amount of PV to be installed). This means that the commissioning of several PV plants/year is very efficient and quick.

#### Weak aspects, challenges

- The replication potential for such a type of project is limited in other States, where the feeding of solar PV power into the grid is not allowed.
- **Solar PV in Social Housing:** On the rooftops of a social housing complex consisting of 5 buildings, a 30 kWp grid-connected PV plant has been installed. The association of the social housing complex will be responsible for periodic cleaning of the panels and security, the operation and maintenance is being done by a contractor.

#### Positive aspects

- The project is a very good awareness raising measure, not only for solar energy but for energy consumption in general with the residents.
- It has a very high replication potential, RMC has already proposed a 100 kWp grid connected solar PV system for further social/affordable housing schemes.
- Please note: In another social housing scheme in Rajkot, a close link to the BEEP project has been made and many recommendations elaborated by the BEEP project have been taken up.

#### Weak aspects, challenges

- The relatively small roof tops of the social houses might not allow for a cost-efficient bankable project (as compared to e.g. PV on the water treatment plants).
- The replication potential for such a type of project is limited in other States, where the feeding of solar PV power into the grid is not allowed.

## Siliguri

- **SUNYA - household waste segregation in Ward 2:** Waste segregation at source is being done in this Ward and households are putting their dry waste in white bins and wet waste in green bins. These bins (two per house) were provided to houses from SDC project funds. The ICLEI team, municipal workers and local women volunteers help in educating people in waste segregation at home.

### Positive aspects

- The Ward Councillor visits the area often and monitors the work
- The slum dwellers in this Ward are now, with some persuasion, segregating waste at source

### Weak aspects, challenges

- Some solid waste is still being thrown in the open drains. The slum dwellers will have to be educated on this aspect and told not to throw waste in open drains.
- **Composting centre near the city dump site:** The segregated waste from some wards of the city is turned into compost here (aerobic composting). This site was set up by SMC and has been in operation for a few years.

### Positive aspect

- There is demand for this compost from Tea Gardens and because of this demand, the city can scale-up composting

## Udaipur

- **SUNYA - household waste segregation in Ward 1 and 41:** So far there had been no segregated waste collection in Udaipur. The waste is collected once-twice a week and directly dumped in a landfill site. After some initial assessments of the wards, ICLEI carried out awareness raising in two wards. The dry and wet waste is now being collected separately and on a daily basis. However, the segregated waste is still being dumped in the same landfill for the present moment.

### Positive aspects

- The households in these two wards are now very aware of segregated waste collection. Around 90% of them practice waste segregation at source.
- The cooperation with local community based associations seem to work very well for awareness raising, there is a certain social control being effected.

### Weak aspects

- As long as the separated waste is still being dumped in the same landsite, there is a high risk that at one point, households lose trust in the systems and go back to not separating their waste. (The same situation has been encountered in Rajkot, even though this was not part of the project) This situation should be changed as fast as possible.
  - For low-income wards the model with daily door-to-door collection seems not to work very well as there is no one at home at the time of collection. An alternative model needs to be found.
  - Quality Control on the closed waste dumping site regarding leakage to groundwater
  - Issue regarding the long transportation for the waste → 25km outside of the town, then back again for the organic waste once the biomethanation site is operational
- **Biomethanation plant:** The construction of a biomethanation plant is currently an ongoing project. Unfortunately there was a legal issue regarding the land where the plant was supposed to be built.

- **Pilot on e-rickshaws:** In order to evaluate the technical capacity and workability of e-rickshaws in the local context of Udaipur 18 e-rickshaws of different types (passenger and freight) have been deployed and their technical and financial performance have been studied.

Positive aspects:

- It was sensible to first have a test phase with the e-rickshaws in the local context of Udaipur. Even though e-rickshaws have proven very successful in other Indian cities, in Udaipur they somehow seemed not to work satisfactorily. The reasons were not fully clear, mentioned reasons were: too hilly terrain, too heavy loads (not only people, but also vegetables being carried, etc.)

Weak aspects, challenges:

- handing over the e-rickshaws to poor operators for free created some challenges: (1) the operators were not able to pay for repair/replacement of the battery which became necessary after some time and the e-rickshaws ended up being unused, (2) other operators were later-on not willing to buy the e-rickshaws with a loan from a commercial bank as the first operators had got the e-rickshaws for free.
- As the e-rickshaws seem not to be suited for Udaipur, the current idea seems to be to rather go for e-autos on a large scale (bankable project). However, the financial and operational model for e-autos are not at all clear and it is therefore still very unsure how the acceptance of e-autos will be with e-auto drivers: when and where will they be charged during the day, how will the financial model for buying more expensive e-autos be, etc.
- The factsheet prepared by ICLEI on the e-rickshaw pilot does not elaborate on the various challenges encountered.
- The transport study done by Swiss experts stated that the largest polluters (GHG) are the motorcycles. Yet, measures focussing on the business-plan for e-rickshaws were chosen to be implemented. It is not clear on which arguments this choice was taken.

All cities

- **AAQMS:** In all 4 cities Ambient Air Quality Monitoring Stations (AAQMS) and a panel showing the real time measurements have been set up. The stations have been installed in various more or less polluted areas in each City.

Positive aspects

- The public display of air quality data increased citizen's awareness on air quality in their city and has led to discussions on air quality amongst people.
- With the new sensors it is possible to calculate the current Air Quality Index.
- Some immediate actions with respect to traffic management have been taken thanks to the available data.
- In Udaipur, the AAQMS data has been used to set up a Clean Air plan submitted to the state government under the Clean Air India mission.

Weak aspects, challenges:

- Apart from the publication of the data and some immediate, short-term actions on traffic management, for most cities no evaluations or direct use of the data has been made.
- Co-benefits of reducing air pollution, GHG reduction and health aspects are not yet part of the awareness raising. We do not have information on the quality of the data, and of the potential to use these measurements for monitoring purposes.

- Steering Committee pronounced some worries about the quality of the AAQMS, and the use of it for a meaningful contribution to the Clean Air dialogue.

## **Adaptation projects**

### **Rajkot**

- **Groundwater recharging structures:** Four out of five planned structures have been implemented in several areas of Rajkot.

#### **Positive aspects**

- Preservation of groundwater is important in Rajkot which lies in an arid zone.
- The structures not only serve the purpose of ground water recharging, but also help draining flooded streets and areas.
- The project has changed the mind-set of Rajkot MC from an opinion that such a structure cannot be done in Rajkot because of its rocky underground to yes it can be done
- It remained unclear how much effect the recharging stations really have on the ground water level. However, the structures are in public zones and support the awareness raising in this field.

#### **Weak aspects, challenges**

- There is a certain risk of polluting the groundwater by recharging it with road runoff water.
- Structures should be covered in order not to have them filled-up with waste and dead leaves.
- The awareness raising aspect of the project could be further improved by providing information at the structures on groundwater recharging and the importance of water saving measures in general.

### **Siliguri:**

- **Acoustic water leak detection and water audit:** Two machines provided to the city to reduce the very high levels of non-revenue water in Siliguri.

#### **Positive aspects**

- The project has saved a lot of time and money for SMC and they have been able to attend to complaints efficiently and rectify the problems easily. With this machine they do not have to break/dig long stretches of road to find the right spot from where water is leaking.
- The equipment is helping to reduce the non-revenue water in the city (which was as high as 70-75%)
- This is quite an easy project to replicate in a very similar way in other cities

#### 6.10. Annex J - CapaCITIES Swiss Expert Missions

Expert Name	Cities Visited	Mission Dates
Simone Bützer (waste water management)	Udaipur	19-24 Dec 2016
	Coimbatore	26-29 Dec 2016
		Jul/Aug 2017
	Rajkot	Jul-2017
Bruno Hoesli (urban planning)	Siliguri	21 Nov – 8 Dec 2016
Stefan Textor (waste management)	Siliguri	Apr-2018
	Coimbatore	Dec-2016
		12-17 Dec 2017
Rafael Fasko (waste management)	Coimbatore	Dec-2016
		12-17 Dec 2017
Jürg Grütter (transport)	Udaipur	Nov-2016
Nicholas Mühlich (transport)	Rajkot	17-18 Nov 2017
		5-6 Feb 2018
	Udaipur	20-21 Nov 2017
	Siliguri	22-25 Nov 2017
Martin Buck (transport)	Rajkot	5 -6 Feb 2018
Martin Stadelmann (bankables)	Rajkot	7- 8 Jun 2018
Reto Dettli (city climate planning)	New Delhi	Jun-2016
		Jan-2017
		Mar-2017
		Aug-2017
Alexander Lüchinger	Udaipur	Jan-2017
	Rajkot	Jan-2018