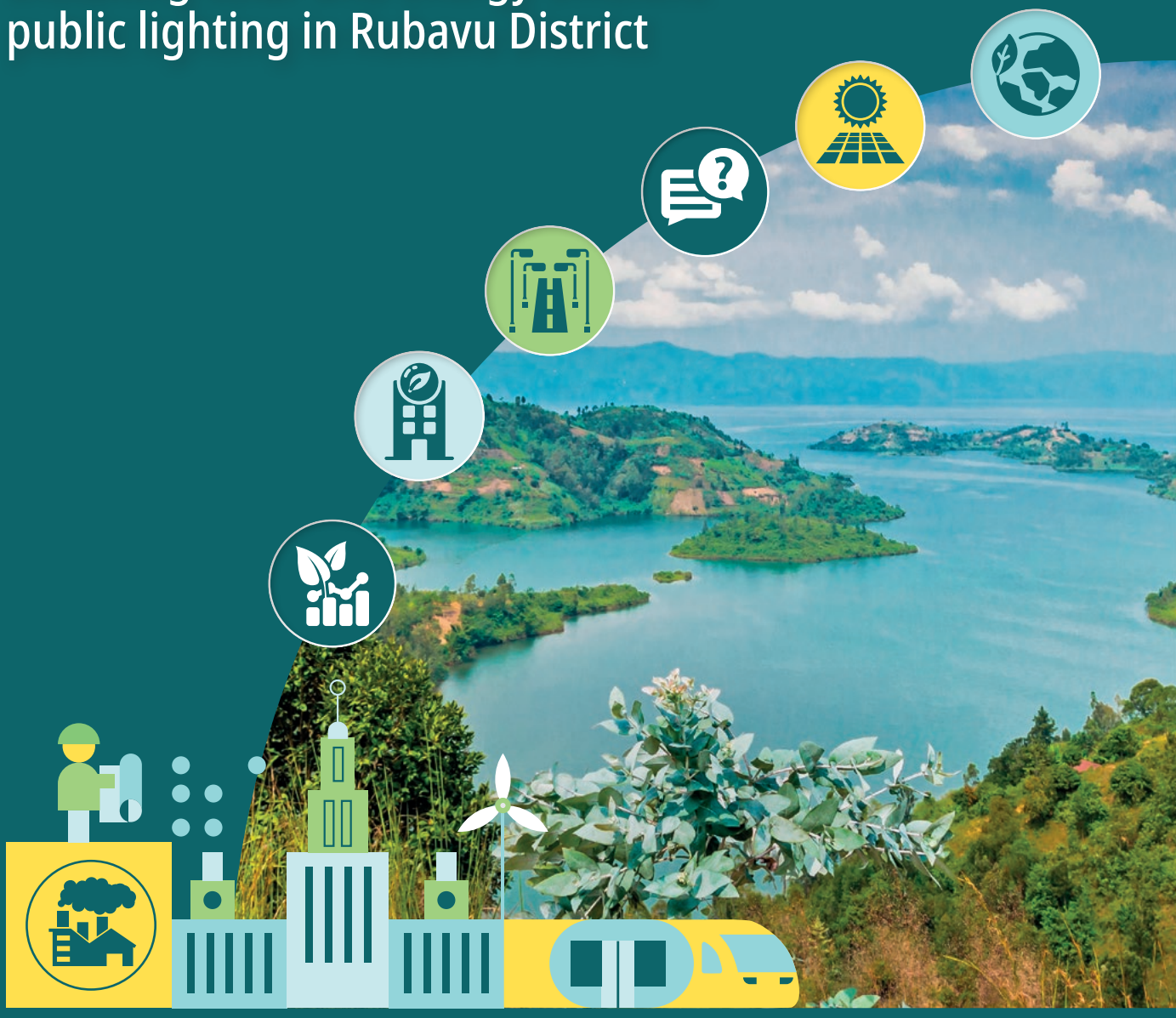
URBAN LEDS
URBAN LOW EMISSION DEVELOPMENT STRATEGIES

# LIGHTING UP LAKE KIVU'S BEACHFRONT WHILE AVOIDING EMISSIONS

## Installing solar and energy efficient public lighting in Rubavu District



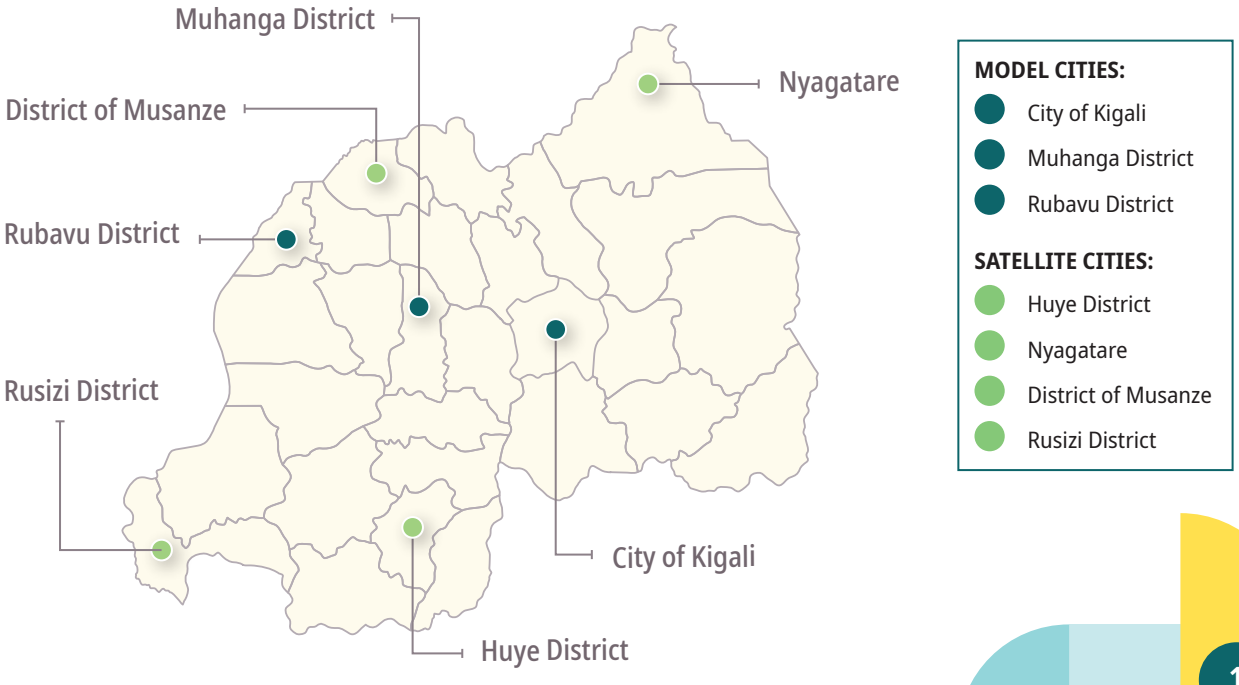
An Urban-LEDS II demonstration project case study

# The Urban-LEDS II project is making a global impact in reducing greenhouse gas emissions

Accelerating climate action through the promotion of Urban Low Emission Development Strategies (Urban-LEDS II) is a global initiative which proceeds from the first phase of Urban-LEDS (2012–2015). The project aims to support local governments in emerging economies to reduce greenhouse gas emissions through low emission development and increase resilience through climate change adaptation actions.

Urban-LEDS II commenced in 2017 and works in Bangladesh, Brazil, Colombia, India, Indonesia, Lao PDR, Rwanda and South Africa. In Rwanda, the project works in seven cities and districts.

Both Urban LEDS phases have been funded by the European Commission and implemented jointly by UN-Habitat and ICLEI.



# Defining Rubavu District as an eco-tourism destination

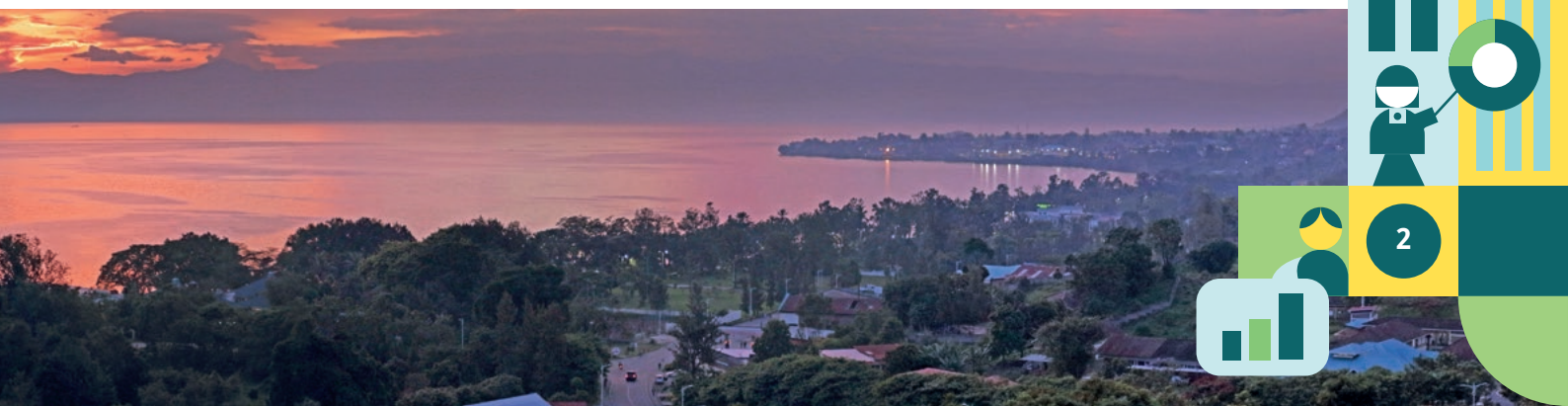
The District of Rubavu is located along the northern shores of Lake Kivu, a vast lake near the renowned Volcanoes National Park, one of Rwanda's main tourist attractions. This makes Rubavu, and especially Lake Kivu, an important tourist destination in Rwanda, with visitors relaxing along these lake shores before or after their visit to the national park.

The tourism industry provides a significant proportion of direct and indirect jobs and investment to the residents of Rubavu, and to the region more broadly. The District is also working to further grow its identity as a tourism hub, especially focusing oneco-tourism.

In order to allow visitors to enjoy the lake shores into the evenings by walking and visiting bars and restaurants and to allow them to feel safe doing so, the District installed public lighting along the beachfront. The public lights provide the benefits expected, but they are energy-intensive and therefore expensive to operate. The District was burdened with high operational costs and had limited ability to expand the network in other public spaces to meet its eco-tourism vision through public space upgrading.

The Urban-LEDS II project partnered with the District to roll out a demonstration project to retrofit public lighting, not only to reduce operational cost, but also to development a funding model that can enable them to expand the network of lights in public open spaces in a financially sustainable manner. Retrofitting with sustainable solutions also avoids greenhouse gas emissions, contributing to the District's commitment to eco-tourism. The project also assisted Rubavu District to build back better as a critical component of the post-COVID-19 economic recovery and broader energy security.

This demonstration project is the first component of a broader green public space upgrading project where local economic development and biodiversity are at the heart of the design.



# Installing solar and energy efficient public street lights along Lake Kivu

In Rubavu District, the Urban-LEDS II demonstration project focused on retrofitting the current public lights along the lake shore with more sustainable solutions. The pilot project also provided the District with a model for further roll out of low emitting, cost-effective public lights. It provided the following:

### 1 Solar street lights

Install approximately 60 solar street lights with 60 Watts each along the shore, placing the solar panels on the premises of a nearby government building. The lamps have twilight sensors and will switch on automatically when it gets dark and off again when it gets light in the morning. The lamps charge during the course of the day, providing them with ample energy to shine throughout the evening and night.

### 2 Energy efficient retrofitting

Existing streetlights were retrofitted with energy efficient LED lamps to save on the operation cost and lower the energy required and therefore the emissions. These lamps also have the twilight sensor to ensure they are only on during times of darkness, thereby further saving energy.

### 3 Financial model

The project appointment a financial expert to develop a concept note that explores possible financial models to upscale street lighting. This includes an early-stage options assessment for a funding model that can support the roll-out of solar public lighting throughout Kigali. This concept was then amended for the District of Rubavu.

# Project replicability and scalability

The establishment of a successful funding model would put Rubavu District among the forerunners in the region and enable replication across Rwanda and Africa. The funding model options assessment is the key component of a concept note for a broader programme of energy-efficient and solar public lighting installation that can be submitted to funders to undertake feasibility studies and implement the model. This assessment was undertaken in such a way as to, as far as possible, be applicable to all districts in Rwanda.

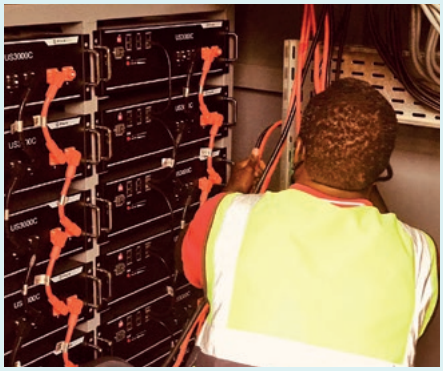
# Further social and economic benefits of the project

Apart from lowering emissions and enhancing the District's identity as an eco-tourism destination, the project will also have a number of additional benefits to the community.

- The project will stimulate the green economy more broadly by supporting the development of low emissions product manufacturers and suppliers in Rwanda.
- Women and children, as generally vulnerable groups, are especially prone to the effects of crime and violence. Improved public lighting can significantly improve and increase safety and security in communities and so reduce the threat of criminal activities affecting these groups.
- Public lighting allows small businesses and traders to continue working after the sun has set.
- Operational savings could be redirected to other service delivery needs in the community.
- As the public lighting network expands, safety in public spaces at night would increase.
- The promenade along Lake Kivu is a well-known and popular attraction for residents and visitors. This would offer high visibility of the demonstration project and the District's commitment to low emissions development and the green economy.

# Aligning with existing policies and plans

The proposed demonstration project contributes to the achievement of the priorities laid out in the National Strategy for Transformation (NST-1) 2017–2024, pillar 1: Economic Transformation and pillar 2: Social Transformation. The project is also consistent with the implementation of the District Development Strategy (DDS) 2018–2024 and the draft of the revised Master Plan 2020–2050 strategic interventions to:



- Develop green eco-friendly infrastructure contributing to the green economic growth
- Improved tourism services
- Enhance public lighting by replacing existing lighting fixtures with more energy-efficient options and installing new energy-efficient lighting on road networks
- Promote recreational and sports activities

In addition, the outcome document of the Rwanda National Urban Forum organised in 2019 recommends “Planning, designing and building green and public spaces” as one of the key action points to be implemented in Kigali and secondary cities.

# What the municipalities had to say

**MR INNOCENT NTIBATEKEREZA**

**District Electrical Engineer:** Rubavu District

## Would you recommend low emissions infrastructure projects to other local governments?

We have actively seen that this type of project has helped us reduce greenhouse gas emissions. We recommend other local governments to implement this kind of initiative in other institutions. This project does not have to be implemented on the beachfront, but it can also be beneficial for health centres, schools and so forth.

## What is the value of this project to your municipality?

We used to pay a significant amount of money for streetlighting and now we are seeing significant savings since implementing this project.

## What impact will this project have on your municipality and the community?

This pilot project has a good impact on the citizens. The money that we have saved impacts on the citizens as we are now able to do other things. The pilot demonstration project, [which has helped put street lighting on Kivu Beach] directly helps communities now have safe access to the beach.

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## URBAN-LEDS II PROJECT AT A GLANCE

**Project name:**
Accelerating climate action through the promotion of Urban Low Emission Development Strategies

**Funded by:**
The European Union

**Global project coordination:**
ICLEI World Secretariat & UN-Habitat

**Implementation in Africa:**
ICLEI Africa

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