

**SOLUTIONSplus:**

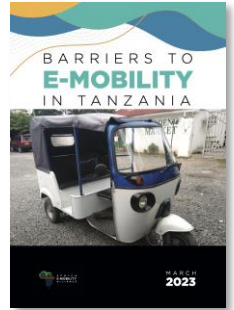
**Innovative Business Models in  
Urban Logistics**

**LATIN AMERICAN ELECTRIC MOBILITY FORUM 2024**

Judith Owigar, UN-Habitat

A large, stylized version of the 'solutiona plus' logo is centered on the page. The word 'solutiona' is in black, lowercase, sans-serif font, and 'plus' is in teal, lowercase, sans-serif font, positioned below 'solutiona'. A vertical teal line runs through the center of the 'plus' and extends upwards, crossing the 'o' in 'solutiona'.

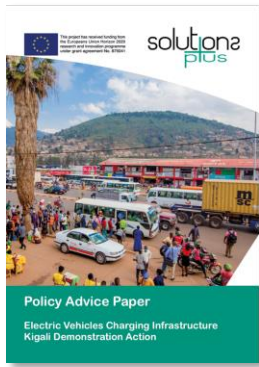
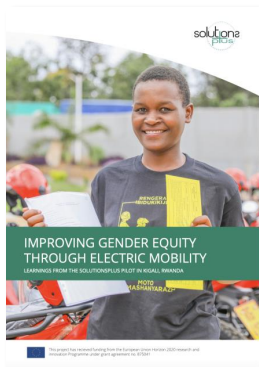
# Africa Demonstration Actions



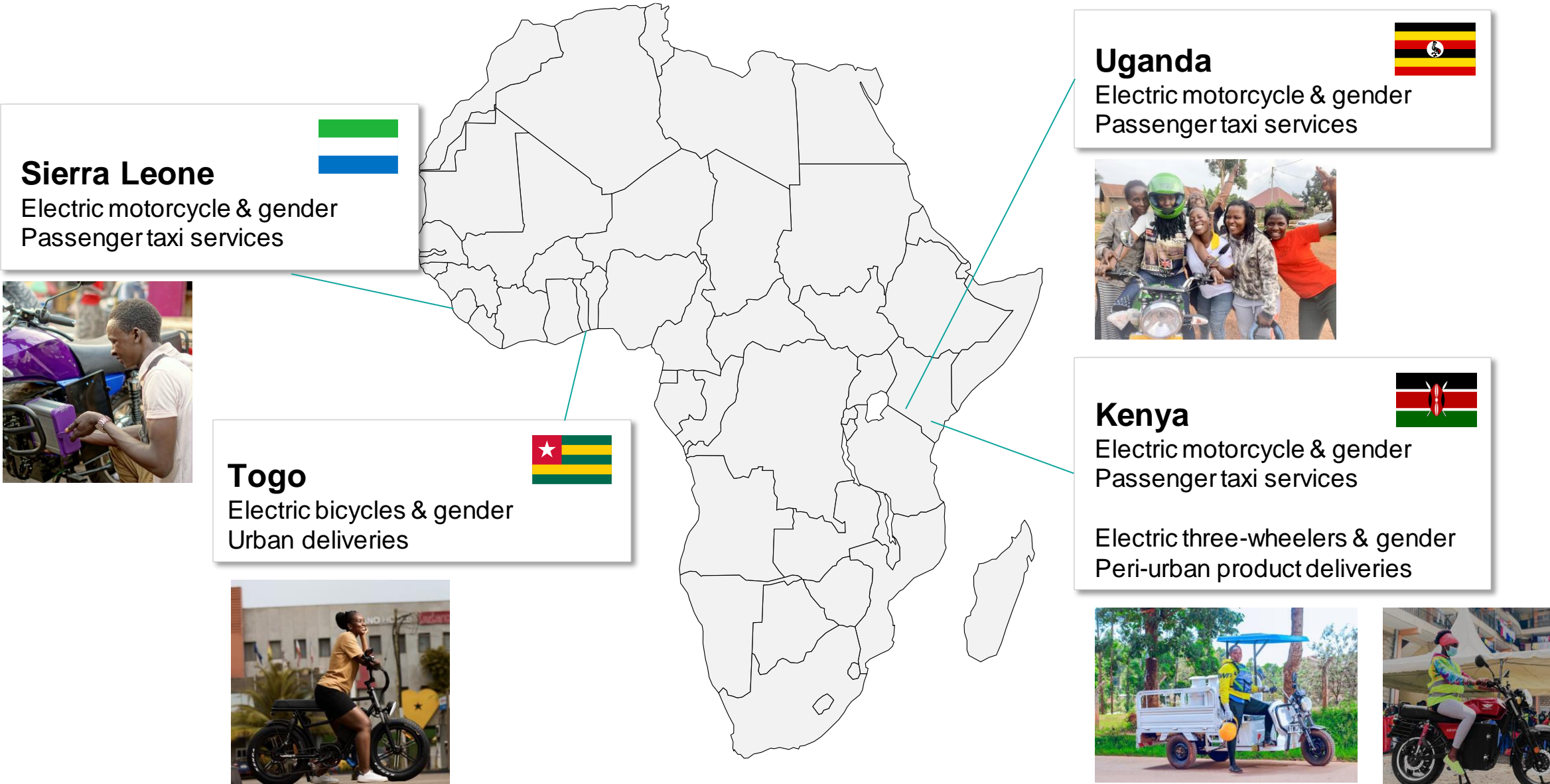
**Rwanda**  
 Electric motorcycles & gender  
 Electric bicycles  
 Electric buses



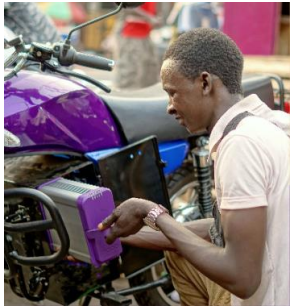
**Tanzania**  
 Electric bajaj (3-wheelers)  
 Electric bicycles



# Africa Replication Actions



**Sierra Leone**  
Electric motorcycle & gender  
Passenger taxi services



**Togo**  
Electric bicycles & gender  
Urban deliveries



**Uganda**  
Electric motorcycle & gender  
Passenger taxi services



**Kenya**  
Electric motorcycle & gender  
Passenger taxi services  
  
Electric three-wheelers & gender  
Peri-urban product deliveries



# Demo – Dar es Salaam, E-bicycles

## FASTA

- Pedal-assist electric bicycles
- Transport of medical supplies in partnership with Aga Khan hospital
- Partnership FASTA, EURIST, FABIO, DIT
- Scale up the use of E-bikes
- Comparison with performance of ICE motorcycles
- Challenges: availability of spare parts and skilled labour to maintain the E-bicycles
- Training for 2 and 3-wheeler technicians



# Demo – Dar es Salaam, E-bajaj (3-wheelers)

## Autotruck and DIT

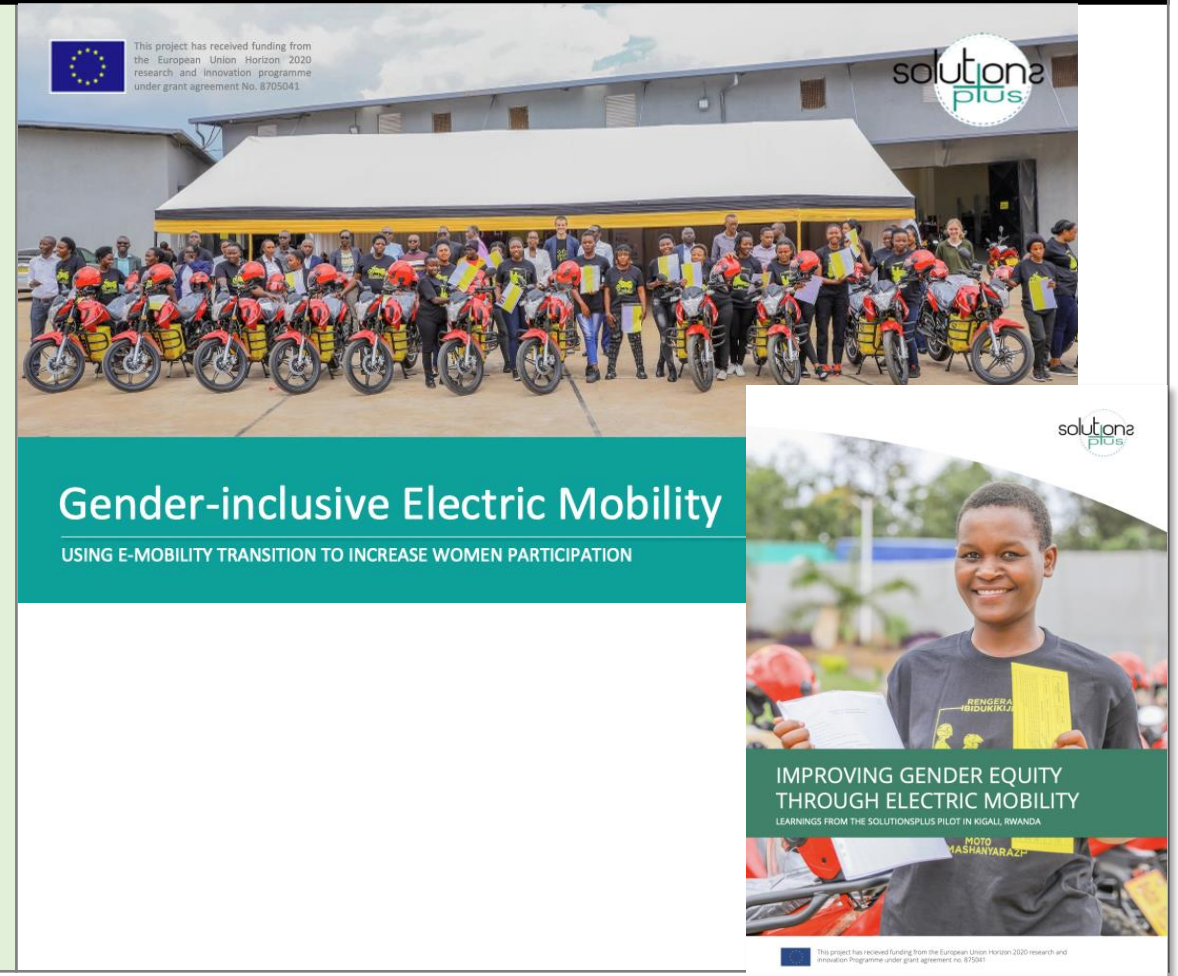
- Project assembled 2 Electric 3 wheelers and retrofitted one
- Planned use of the 3-wheelers for distributing the 3-wheelers spare parts to various places in the institutions



# Demo – Kigali, E-motos

## Ampersand Rwanda

- Analysis of barriers and success factors for gender-inclusive projects; Flone Report
- Phase I: 35 women trained, 24 e-moto-taxis handed over, Phase II: 25 women trained, 25 e-motos to be handed over
- 2-month grace period as they build confidence on the road, flexible work arrangements (TBC)
- Partnership with delivery companies for the jobs, the female drivers prefer doing deliveries than working with passengers



# Ownership

- In Dar es Salaam, most ICE drivers get contracts from individuals, not from companies. Pay lease on a weekly or daily basis until the end of the contract period.
- This arrangement is seen as giving the driver an incentive to take care of the vehicle.
- In Kigali, (Ampersand) the drivers have a lease-to-ownership scheme.
- Drivers pay a deposit amount, then continue repaying the loan on a weekly basis and pay for the battery swap

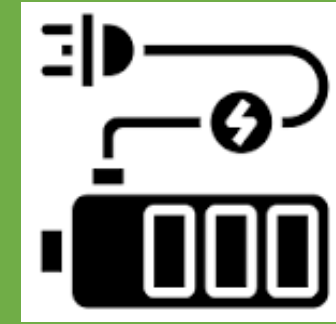
# Lease-to-Own EV Model



1. Innovative Financing  
Same day EV Loans



2. Pay-as-you-go  
Mobile Payments



3. Battery-as-a-service  
Maintenance



# Lease-to-Own Model

- With individual drivers – a common model for two- and three-wheelers used for taxi/ delivery services in East-Africa
- In Dar es Salaam, leasing fees of the ICE vehicles represent nearly half of their operational costs.
- Challenges:
  - Identify drivers who can regularly pay the leasing fees on time.
  - High payment default rates and in the absence of formal asset financing companies
  - This causes high interest rates in the model
  - Complaints of predatory loans
  - Opportunity for formal asset financing companies/ banks to finance microfinance institutions to reduce the interest rates- MAF Tanzania

# 1. Innovative Financing

- Targeting the unbanked
- Same day loans from micro-finance institutions- attached to individual's business
- Reduced/ simpler Know Your Customer (KYC)
- Loans paid through mobile money
- IoT devices installed on LEVs allowing for automatic shutdown in case of non-payment

## 2. Pay-as-you-Go

- Pay for the usage of the Evs: charging or battery swap
- Users pay based on how much energy the riders consume
- This is mainly linked with the battery swapping model
- Debate between battery swapping and direct charging; this is determined by distribution of charging infrastructure: Charging stations/ swap stations

# 3. Battery-as-a-Service

- To derisk cost and maintenance of the battery
- Separating the battery cost from the motorbike
- Riders able to afford high-end electric motorcycles without bearing the high up-front cost of batteries.
- Companies maintain the batteries and can improve the technologies easily
- Popularity of battery swapping increasing cause companies can separate battery cost from EV cost

# Opportunities for Development

- Business Models for the development of multimodal charging infrastructure
- Solar Charging to be used together with Grid Power (unstable)

# **SOLUTIONSplus:**

## **Africa Innovative Business Models in Urban Logistics**

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