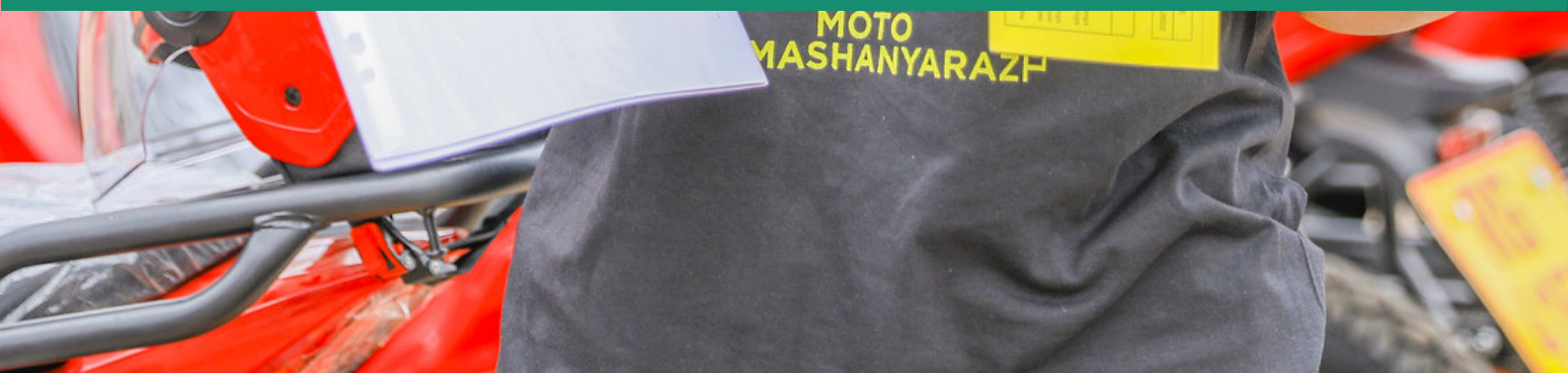




# IMPROVING GENDER EQUITY THROUGH ELECTRIC MOBILITY

LEARNINGS FROM THE SOLUTIONSPUS PILOT IN KIGALI, RWANDA



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## EXECUTIVE SUMMARY

### NEED FOR ACTION

Improving the situation of women in transport is critical: Three in five women across the globe experience sexual harassment when using public transport. The lack of safety directly impacts women's mobility, reducing their access to jobs, education, economic opportunities, and social contacts. Women are also critically underrepresented in the transport workforce, representing less than 20% of the global workforce and often victims of workplace violence and harassment.

One of the pathways to challenge male-dominated mobility is to increase the involvement of women incrementally. The transition to electric vehicles, when designed with a gender-inclusive focus, as seen in Nepal, provides an opportunity to redefine the participation of women in transport.

### KIGALI GENDER-INCLUSIVE E-MOTO PROJECT

In Kigali, the SOLUTIONSplus project partners embedded a gender-inclusive focus in their pilot of electric motorcycle taxis. This is a result of a joint effort by UN-Habitat, the City of Kigali, the University of Rwanda, the Urban Electric Mobility Initiative (UEMI), the Wuppertal Institute, jointly with Ampersand – an electric mobility company, the German Agency for International Cooperation (GIZ) and Jali Finance – an asset financing company.

### POSITIVE RESULTS

Careful analysis of past experiences in gender-inclusiveness in Kigali led to the identification of critical success factors for the project. Among the 35 women having benefitted from the driving training, 24 women were successful at the driving test and received their electric motorcycles in November 2022. This success rate was unprecedented in Kigali. Constant monitoring of the use of the motorcycles, research on enabling factors, motivation for women to participate and barriers contributed to lessons learnt.

Kigali's experience enabled to identifying five key principles for gender-inclusive electric mobility projects: Planning, Training, Retaining, Evaluating and Disseminating, presented in the checklist below. Recommendations are given for scaling up projects in Kigali and replicating similar projects in East Africa.

## REPORT PURPOSE: SHARE RECOMMENDATIONS WITH CITY AND REGIONAL PARTNERS

This report aims to share learnings to:

- Support Kigali-based projects aiming to increase women's role in electric mobility operations as taxi or delivery services.
- Initiate a dialogue and peer exchange among companies based in East Africa with a gender-inclusive focus, particularly for the companies selected in the SOLUTIONSplus replication calls in Kenya, Uganda, Sierra Leone, and Togo.

## CHECKLIST FOR A GENDER-INCLUSIVE E-MOBILITY PROJECT

\*\*\* Key recommendations for scale-up projects in Kigali and East Africa

### # PRINCIPLE 1: PLANNING

- ✓ **Map the context:** Conduct a thorough contextual baseline analysis by (1) reviewing prior gender-inclusive projects, (2) reviewing the literature, and (3) mapping key stakeholders to design a locally fitting project.
- ✓ **Understand gender norms:** refine the contextual analysis by identifying local social norms in the transport sector.
- ✓ **Co-design the project:** develop (1) a vision, (2) an implementation strategy, and (3) a collaborative approach bringing together partners with expertise in project coordination, electric vehicles and charging infrastructure, financing, training, use cases, research, policy and institutional support, and dissemination.
- ✓ **Co-develop a monitoring plan,** including evaluation and learning.

### # PRINCIPLE 2: TRAINING

- ✓ **Select a cohort of trainees:** (1) identify an appropriate cohort size matching the capacity of the driving school\*\*\* (2) develop clear beneficiary selection criteria (3) recruit interested and committed participants.
- ✓ **Select a suitable driving school:** (1) do a competitive bidding process including minimum requirements and bonuses, such as an adequate number of training vehicles, prior experience in training women, female trainers, and anti-harassment policy\*\*\*, and (2) ensure safety during the training.
- ✓ **Ensure supportive training conditions\*\*\*** including (1) favourable financial conditions, (2) in a location easily reachable by all participants, (2) regular monitoring of the training and any case of gender-related violence, and (3) raising awareness of the driving school on sexual harassment.



- ✓ **Ensure conducive driving exam conditions\*\*\*:** Assess whether the exam may occur in a protected environment.
- ✓ **Train on electric vehicle specificities.\*\*\***

### # PRINCIPLE 3: RETAINING

- ✓ **Tackle potential future retainment challenges before and during the training\*\*\*** by (1) clarifying the physical implications of driving a motorcycle when recruiting beneficiaries, (2) involving male family members during key training moments to mitigate opposition, (3) encouraging peer-to-peer support.
- ✓ **Assess the pros and cons of passenger versus delivery services,** considering aspects of safety, working hours, physical implications, the existence of a delivery market and digital platforms, and involve delivery or ride-hail platforms from the project onset\*\*\*. In East Africa, the delivery market is generally considered an easier and safer entry point for women. In case deliveries are not possible, three strategies are identified to mitigate risks associated with passenger taxi services: (1) creating a dedicated structure or space for women to operate together, such as a cooperative or a women-only waiting point (2) partnering with platforms allowing women passengers to choose women riders (3) prioritising operation at daytime.
- ✓ **Monitor operations over sufficient time and under safe conditions** by (1) looking at potential issues such as any accidents, health or physical issues, gender-based violence situations experienced, challenges to combine working hours and care duties, (2) creating safe spaces for discussion, for instance via women-only groups.\*\*\*
- ✓ **Provide continuous training** to female beneficiaries on their rights and other sets of skills.

### # PRINCIPLE 4: EVALUATING

- ✓ **Understand perceptions of trained women** concerning the motivating factors and barriers to becoming active in the transport sector and relating to the type of electric vehicles used in the project.
- ✓ **Understand perceptions of the wider female population** to compare and contrast with the findings from the cohort of beneficiaries.

## # PRINCIPLE 5: DISSEMINATING

- ✓ **Scale successful elements of the e-moto pilot** by (1) organising exchanges with like-minded companies and (2) transparently sharing learnings and recommendations via the creation of an exchange platform\*\*\* and through increased media and awareness-raising, including during community events\*\*\*, (3) discussing policy implications, e.g. recommendation for driving schools to have a company policy and procedures to address gender-based violence.
- ✓ **Replicate successful components of the e-moto pilot** (1) in other cities in the same country or at the regional level, e.g., SOLUTIONSplus replication companies in four African countries all with a gender focus (2) leveraging on national and regional organisations for women in transport, or creating networks of women in transport.
- ✓ **Think about other segments of the value chain\*\*\*** (1) for instance, vehicle or battery assembly, for maintenance and repairs, or as battery swap attendants and (2) improving the enrolment of women in Science, Technology and Mathematics (STEM) at an educational level.
- ✓ **Think of other vehicle types:** (1) Consider opportunities provided by other vehicle types, such as electric three-wheelers, allowing physical separation between the driver and passengers, and (2) Consider gender barriers faced in other sustainable modes, e.g., walking and cycling.



## SOLUTIONSplus

The SOLUTIONSplus EU flagship project aims to enable transformational change towards sustainable urban mobility through innovative and integrated electric mobility solutions in pilot and replication cities across the globe. It is funded by the Horizon 2020 Research & Innovation programme.

The project provides a platform in each pilot city, bringing together local and international partners with complementary expertise to collaboratively work under an Urban Living lab approach. In Kigali, the project is composed of the City of Kigali, the University of Rwanda, UN-Habitat, UN Environment, the Urban Electric Mobility Initiative (UEMI), the Urban Living Lab Center (ULLC) implemented by the Wuppertal Institute, UNEP-CCC, ITDP Africa, PluService and FIER Automotive.

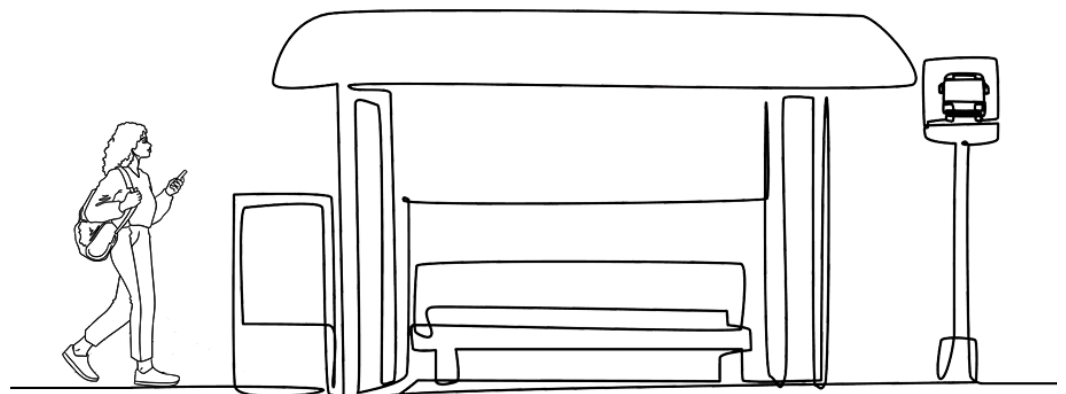
In Kigali, the project supports electric last-mile connectivity (electric motorcycles, shared electric bicycles), institutional cooperation for the uptake of electric mobility, and electrification of public transport. The project also provides capacity-building activities, peer-to-peer exchange, site visits, urban design proposals, a master plan for e-bus charging in the city, and policy and financial recommendations to scale.

Project partners opted for a robust gender-inclusive focus in the electric motorcycle component, which is the object of this report.





# Women face daunting challenges in the transport sector



## WOMEN FACE DAUNTING CHALLENGES IN THE TRANSPORT SECTOR

Across the world, women are confronted with a myriad of problems related to transportation. They are underrepresented in the transport workforce, and as transport users, they often face mobility constraints such as insecurity, verbal harassment, intimidation, and sexual harassment.

### CHALLENGES FOR WOMEN AS TRANSPORT PASSENGERS

Sexual violence is not uncommon: globally, three out of five women were victims of sexual harassment when using public transport (EBRD et al., 2020). Surveys show that 54% of women in Nairobi (Kenya) and 45% of young women in Kampala (Uganda) experience sexual harassment while using public transport. In India, studies showed that up to 91% of women felt that public transport was unsafe. In Buenos Aires (Argentina), 89% of interviewed women reported having experienced sexual harassment on public transport (EMPOWER Consortium, 2022).



#### SEXUAL HARRASMENT

**3 out of 5**

woman were harrassed in public transport

**91%**

Indian women felt unsafe in public transport

**89%**

Argentinan women have experienced sexual harassment in public transport

There is a higher risk of physical abuse in the context of crowded transportation and male-dominated mobility. Verbal and physical aggression typically occur at transport stations or in vehicles such as buses, minibuses or feeder modes. Situations of harassment are often met with indifference or lack of support from fellow passengers or transport staff or may even be perpetrated by transport staff themselves (Leon-Himmelstine et al., 2020).

The extent of the problem is likely worse than depicted due to the lack of proper reporting mechanisms. Women may fear to report, especially if little trust is given to the voices of women and girls. Women may also not want to be identified as a vulnerable group or experience pressure from male family members when sharing their experiences, even in dedicated research groups (Ngabirano, 2023). In many contexts, girls may even be blamed for being co-responsible for aggression by having not “properly” behaved or dressed.

This situation critically impacts women’s movements: many women limit their movements at late hours or night, decide to travel only if accompanied, or may even decide not to use collective transport services, opting for walking that increases their travel times. This makes women dependent on their male partners and reduces their access to jobs, economic opportunities, higher education, health services, and social contacts. In Malawi, cases of rape from male transport workers were found to cause teenage pregnancies and interruption of studies, with the blame put on girls as bearing shared responsibility (Porter, 2011).

Besides physical violence, women often face multiple mobility constraints in their daily activities, such as control of movements from male family members, and gender norms considering female mobility with suspicion (ibid). Physical constraints hinder women’s movements, especially of mothers, as vehicles are not planned for transporting children and babies (for instance, not designed to transport a stroller) or public transport stations are not equipped with changing facilities.

### LACK OF PARTICIPATION IN THE TRANSPORT INDUSTRY

On top of these issues, women face significant under-representation and discrimination in providing transport services. Historically, the transportation industry has been overwhelmingly male-dominated, and this situation persists. In 2018, on average, women represented only 17% of the transport workforce in 46 countries studied (Ng and Acker, 2020). In many geographical contexts, it is challenging, if not impossible, for women to enter a male-dominated industry because of barriers put by social norms, fear of harassment, fear of poor road safety, or lack of access to loans necessary for equipment purchase (Leon-Himmelstine et al., 2020; Porter, 2011). The minimal participation of women in the transport sector is found across the entire spectrum of transport occupations, including drivers, owners, mechanics, vendors, station attendants, etc. The absence of equal representation in the transport workforce results in gender bias in the transport sector, as women’s

views are not integrated into the planning and operation of transport systems.

Tackling this is even more critical since, even when managing to work in the transport sector, women often experience verbal or physical violence: a survey from the European Transport Federation found that 25% of female transport workers in 24 European countries regularly experience violence (EBRD, IFC & CFC, 2020).

Culture is also one of the aspects that hinder the participation of women in the transport industry, a sector that was seen to be fit for men only. It is vital to increase awareness, not only in educational institutions but also in communities. Government commitments to address issues that hinder the participation of women in the transport industry should be reinforced.

## SITUATION IN SUB-SAHARAN AFRICA

In Sub-Saharan Africa, women of various ages commonly face similar gender-based violence and harassment (GBVH) in public spaces and all transport modes.

In Lagos, only 5% of female students reported feeling always safe when walking to and from or waiting at feeder stations (tricycle, motorcycle) at night (Otu and Aguga, 2020). In Nairobi, Flone Initiative found in 2018 that harassment is widespread in the matatu sector (minibuses offering collective transport services); 58% of interviewed women working as drivers or conductors<sup>1</sup> witnessed sexual harassment every day. Reporting such situations is difficult as fellow passengers often do not intervene; 32% of the victims would stay silent, only 6% would report to the police and 2% to the unions (Flone Initiative, 2018).

In Kigali, a study conducted in 2012 found that more than 50% of surveyed women felt concerned about travelling after dark in Kigali to go to school or for leisure and would therefore limit their movements after 6 pm (UN Women, 2013). More than three-quarters of interviewed men and women made women responsible for sexual harassment by walking at night, dressing, or behaving “provocatively”. Mobility is associated with fear: bus stations were considered as places particularly unsafe, and public transport vehicles were relatively unsafe (ibid).

Women are underrepresented in the public transport industry. In Nairobi, only 7% of the core jobs of drivers and conductors are female



(Flone Initiative, 2018). When considering economic activities adjacent to public transport, such as street vendors near transport hubs, women are represented at about 19.3% (Spooner and Manga, 2019). In Rwanda, women are also vastly under-represented in the transport sector. Women represented 2.6% of the transport workforce in 2019 and 2020 (Ministry of Infrastructure, 2021). In the moto-taxi sector, among the 36,875 drivers reported in the Labour Force Survey of 2017, there were no female drivers (Flone Initiative, 2022). In two studies conducted in 2019, surveyed cohorts were exclusively male (Dusabe, 2019; Thom et al., 2020). On top of this difficulty, to enter a male-dominated industry, women have much lower access to finance, thus vehicle purchase (Ministry of Infrastructure, 2021).

Data on gender-based violence women face in urban mobility in Sub-Saharan Africa is limited, as research focused on household-based violence or rural rather than urban mobility (Priya Uteng, et al., 2021). Many organisations now look closer at the problem, echoing women's concerns about transport and public space in Sub-Saharan Africa. Some of the most prominent voices are the gender-focusing organisations Flone Initiative in Kenya or Women Rising Africa in Uganda, accompanied by programs from international organisations (Plan International's Safer Cities for Girls in Kampala and Nairobi, UN Women, UNEP), researchers (e.g. Gina Porter) or research consortium (e.g. EMPOWER). A 2022 study by UNEP and Flone Initiative on integrating women in the uptake of electric mobility in the Powered Two- and Three-Wheeler (PTW) sector examined the gender dimensions, policy gaps and opportunities for leveraging women's uptake of electric mobility in Nairobi, Mombasa, and Kisumu. The study highlights the need for feedback from surveys and projects to policymakers since current transport policies and legal frameworks fail to explicitly recognise gender-differentiated mobility patterns (Flone Initiative, 2022).

## ZOOM: MOTORCYCLE TAXIS POSING SPECIFIC CHALLENGES FOR WOMEN

*“Before Safer Cities, I used to sexually harass girls a lot – catcall, touch them inappropriately and demean them. It was the culture in the boda boda industry. What we used to think about girls, it was not the right thing. I saw women as worthless, as sex objects. We weren’t aware it was wrong. We had our rules but these rules weren’t focused so much on the safety of girls and women in the city. They only benefitted us, the boda boda riders.” Eric, 24 years*



In East Africa, the motorcycle taxi (hereafter, “moto-taxi”) sector provides transportation services in contexts of insufficient public transport coverage and improves accessibility, but it also poses daunting challenges for women. It is a nearly male-dominated industry, with 99% of motorcycle drivers male (Bishop and Courtright, 2022). 97.4% of drivers in Kenya are male (Odhiambo Opondo and Kiprop, 2018). In four studies conducted in Nairobi, Kigali and Kampala, cohorts of drivers surveyed were only male (Kisaalita and Sentogo-Kibalama, 2007; Martin, 2020; Minter, n.d.; Thom et al., 2020).

Gender-based violence is frequent. In Kenya, harassing passengers, raping or defiling women and girls, offering money to girls on the way to school in exchange for sexual favours, and sexually harassing customers in 2018 represented 8.3%, 6.4%, 2.5 and 2.4%, respectively, of criminal offences

in 24 counties, that is nearly one-fifth of total offences documented (Odhiambo Opondo and Kiprop, 2018).

The following dimensions of the moto-taxi sector are “risk points” posing specific challenges for women and need particular consideration:

**Physical proximity in the vehicle:** The driver and the passenger sit very closely, significantly increasing the risk for physical aggression and, even if the absence of violence, may simply not be comfortable for female passengers. The risk of assault from male passengers also exists for the rare women providing commercial moto-taxi services.

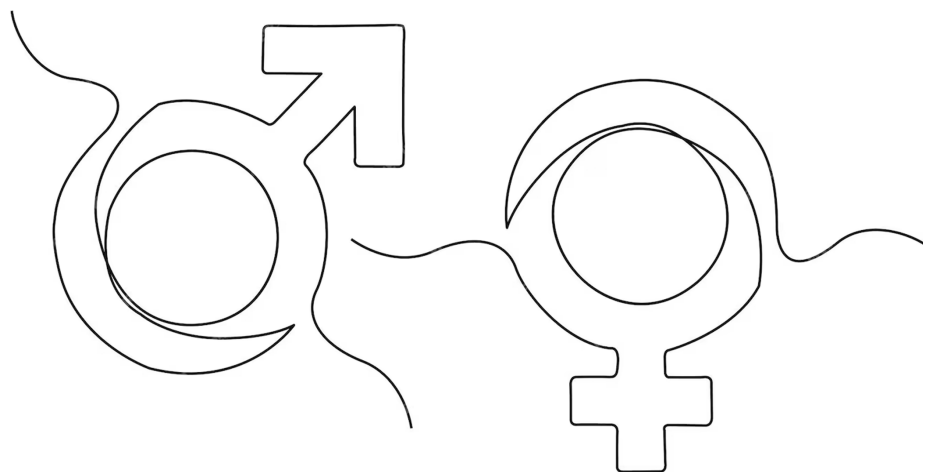
**Harassment risks at the moto-taxi waiting point:** Male-dominated waiting points create an unfavourable environment for women to access taxi services, as male drivers wait together for customers. While these places – called “stages” in Kenya and Uganda - provide a place for financial and social solidarity between drivers through the constitution of associations and practices of loans (Bishop and Courtright, 2022; Ibrahim and Bize, 2018; Martin, 2020), male-dominated waiting points also increase the risk for harassment of female passengers, ranging from displaced remarks to aggression.

**Safety gaps:** Carrying a helmet for both driver and passenger is commonly required by national regulations but often not applied, except in Rwanda. Besides the issue of accessing affordable quality helmets, a gender-sensitive barrier lies in the design of helmets, which are too often small for use by African women with elaborate and voluminous hairstyles.

Programmes have increasingly acknowledged and addressed these challenges in recent years. The moto-taxi sector started recognising the issue: the Boda Boda Safety Association of Kenya (BAK) created a Women's Chapter and condemned acts of gender-based violence (Mito, 2020; UNFPA Kenya, 2020). In Uganda, Women Rising for Africa strives to enable to work as moto-taxi drivers by providing trainings covering a broad spectrum of areas, from driving to self-defence or business management. National institutions such as the Kenyan State Department for Gender and Affirmative Action initiated a sensitisation programme on gender-based violence (Sadik, 2023). International organisations such as the United Nations Population Fund (UNFPA) support these efforts. In the context of the « Safer Cities for Girls » developed by Plan International, UN-HABITAT, and Women in Cities International, Plan International provided recommendations on tackling social norms and training male drivers on girls' safety (Plan International, 2020).



# Improving gender equity in the transport sector



## IMPROVING GENDER EQUITY IN TRANSPORT SECTOR

As women are getting increasingly economically active in Sub-Saharan African countries – there has been a sharp increase, from 30% in 1989 to 60% in 2011, in the number of households headed by a female member (Priya Uteng, et al., 2021) –, it is becoming vital to ensure that mobility barriers do not stop progresses in empowerment and equality.



It is, therefore crucial and urgent to improve the conditions for women in the transport sector. The Sustainable Development Goals (SDGs) recognise this need, detailing in SDG 5 pathways and indicators on how to achieve gender equality and empower all women and girls. Target 5.2 aims to

**“eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation”.**

In contrast, target 11.2 further emphasises the need to “provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons by 2030”.

Governments have started addressing the problem worldwide, but efforts often remain insufficient or lack effectiveness, for instance, by focusing on measures with limited capacity to prevent aggression, such as CCTV cameras (Priya Uteng, et al., 2021). A wide range of interventions can be implemented by decision-makers, agencies, transport providers, NGOs and researchers, as shown in following Figure 1.



STAKEHOLDERS	CATEGORIES	EXAMPLES OF MEASURES
<p>Decision-makers Government agencies Police</p>	 <p>Legal and Institutional Framework</p>	<ul style="list-style-type: none"> <li>› Remove any remaining legal barriers for women to work in transport, e.g. restrictions to drive, no access to jobs, lack of maternity rights, etc.</li> <li>› Legislate against street harassment, sexual assault and rape.</li> <li>› Mandate transport companies and driving schools to develop GBHV policies.</li> <li>› Create a women’s safety Committee with members from the commuters’ association, NGOs, decision-makers, government agencies and police.</li> <li>› Integrate gender inclusion in bidding processes for contractors.</li> </ul>
<p>Transport providers and representative bodies Transport contractors Driving schools Digital platforms</p>	 <p>Company Policies</p>	<ul style="list-style-type: none"> <li>› Develop company policies, procedures and codes of conduct to address GBHV.</li> <li>› Recruit more women in all areas (decision-making, planning, construction, management, operations, and maintenance) and review human resource policies to remove barriers.</li> <li>› Develop mechanisms to confidentially report situations of GBVH for both workers and users (e.g. hotline, SMS, in-person at stations) and support systems for workers.</li> <li>› Digital tracking and tracing tools.</li> </ul>
<p>Non-governmental organisations (NGOs)</p>		
<p>Associations of commuters or residents</p>		
<p>Research institutions</p>		

STAKEHOLDERS	CATEGORIES	EXAMPLES OF MEASURES
<p>Decision-makers Government agencies Police</p>	 <p>Pilots</p>	<ul style="list-style-type: none"> <li>› Develop projects targeting increased women’s involvement in transport provision.</li> <li>› Develop asset financing programs with specific conditions for women.</li> <li>› Develop female-dedicated services, for instance, booking mechanisms of female passengers for female drivers.</li> </ul>
<p>Transport providers and representative bodies Transport contractors Driving schools Digital platforms</p>	 <p>Infrastructure</p>	<ul style="list-style-type: none"> <li>› Improve lighting on sidewalks, at public transport stations and in public spaces.</li> <li>› Install well-lit toilets in secure areas with baby-changing facilities.</li> <li>› Deploy kiosks at transport stations for women to report GBHV situations.</li> <li>› Install surveillance cameras at stations.</li> </ul>
<p>Non-governmental organisations (NGOs)</p> <p>Associations of commuters or residents</p>		<ul style="list-style-type: none"> <li>› Install emergency buttons for both passengers and drivers.</li> <li>› Display information about GBVH reporting mechanisms in vehicles; display vehicle operator details.</li> </ul>
<p>Research institutions</p>	 <p>Vehicle Design</p>	<ul style="list-style-type: none"> <li>› Design vehicles with individual seating</li> <li>› Design vehicles considering the needs of pregnant or older women (e.g., seats) and for transporting strollers.</li> </ul>



STAKEHOLDERS	CATEGORIES	EXAMPLES OF MEASURES
Decision-makers Government agencies Police	 Awareness Raising	<ul style="list-style-type: none"> <li>› Analyse whether transport equipment may create issues for women (e.g., helmets and hair) or risks (e.g., physical proximity).</li> </ul>
Transport providers and representative bodies Transport contractors Driving schools Digital platforms		<ul style="list-style-type: none"> <li>› Train transport workers on gender sensitivity, GBVH, and existing reporting mechanisms; work with male drivers on social norms and masculinity.</li> <li>› Conduct awareness campaigns on GBVH to the wider public on TV, printed and digital media, during events, and including on public transport infrastructure and tickets.</li> <li>› Promote girls' involvement in STEM (Science, Technology, Engineering and Math) and vocational training.</li> </ul>
Non-governmental organisations (NGOs)		<ul style="list-style-type: none"> <li>› Collect and monitor GBVH-related data via safety audits and surveys.</li> <li>› Understand social norms at play in society and the transport sector.</li> </ul>
Associations of commuters or residents	 Understanding	
Research institutions		

Figure 1. Possible measures to alleviate gender imbalance in the transport sector (own representation based on Empower Project, 2023; EBRD) et al., 2020; own additions, non-exhaustive list of measures)



# Leveraging the transition to electric mobility



## LEVERAGING THE TRANSITION TO ELECTRIC MOBILITY

Using the momentum of transitioning to electric vehicles can offer the opportunity to re-think the place and experience of women in transport. Electrification bears some transformative potential as it brings in new stakeholders (companies assembling, importing, or manufacturing electric vehicles; companies providing charging infrastructure or offering battery swapping services), new business models or conditions to access vehicles, and requires new skills and corresponding job positions at various phases of the supply chain (design, production, and assembly phase; charging or swapping; maintenance and repairs; software development).

If proactively designed with a gender focus from the start, the transition to electric mobility can bring meaningful change. The Safa Tempos (Nepal) provide an inspiring example where this approach significantly increased the number of women working as vehicle drivers.





## WOMEN-DRIVEN TRANSITION: THE SAFA TEMPOS, NEPAL

*Electric three-wheelers in Nepal called Safa Tempos, have seen a dramatic improvement in the involvement of women in public transport services. Remarkably, with over 700 Safa Tempos driven by women in Kathmandu, most of the fleet is owned and operated by women (Patella et al., 2018).*



This trend began in the late 1990s alongside the growth of electric mobility, driven by the ban on the highly polluting fossil fuel three-wheeled Vikram Tempos. A dozen women were first supported by organisations such as the Kathmandu Electric Vehicle Alliance (KEVA), Winrock's Clean Energy group or Helvetas to purchase and operate Safa Tempos. Since 2018, the fin-tech company Aloj has helped Safa Tempo entrepreneurs access affordable finance (Aloj, 2021; Bijuli Power, 2023). These initiatives tackled a key stumbling stone preventing women from getting active in the transport sector: the lack of access to financing, preventing them from purchasing vehicles. Indeed, low-income female earners had limited financial resources and little to no access to loans, while banks were not interested in financing individual equipment of a value of circa 4,000 to 4,500 USD. Pilot projects were put together to respond to the issue, pulling and guaranteeing small loans, providing supporting grants, and recruiting and training women to become drivers. Projects aimed at enabling women to drive the Safa Tempos and to own them (Cassidy, 2020).

The pilot program's success was evident as the women paid back the loans in full and on time. The driver-owner scheme proved effective, gaining the trust of banks that began lending to female Safa Tempo drivers, leading to the replication of the pilots.

The impacts of women becoming Safa Tempo drivers have been transformative. Their incomes have significantly increased, allowing for entrepreneurship opportunities as some women invested in more vehicles. This change brought additional positive effects, such as improved earnings, access to higher education levels for their children, or access to health services they could previously not afford. The physical design of the Safa Tempos is a further positive factor: the space near the driver's seat allows women to bring their children to and back from school, and the physical separation from passengers reduces the risks of aggression.

Noticeably, the involvement of women resulted in more sustainable use of vehicles. Female drivers were found to tend to drive fewer hours due to their family responsibilities and at lower speeds, resulting in longer battery life for the Safa Tempos (Cassidy, 2020).

Overall, the involvement of women in the operation and ownership of Safa Tempos has brought about socioeconomic benefits and paved the way for increased access to financing. The success of the pilot program and the positive impact on women's lives showcase the potential of empowering women in the transport sector while promoting sustainable electric mobility. This trend of women driving Safa Tempos has been consistent till now. However, the vehicles are now old and need modernisation. This led SOLUTIONSplus to include a pilot in Kathmandu to remodel Safa Tempos to ensure that women remain in the driving seat.

# The gender- inclusive electric mobility project in Kigali



## THE GENDER-INCLUSIVE ELECTRIC MOBILITY PROJECT IN KIGALI

Identifying the challenge of the under-representation of women in the transport sector, SOLUTIONSplus partners decided to integrate a strong gender focus to support electric mobility. The project aimed at training a cohort of women to become moto-taxi drivers and equipping them with electric motorcycles. This pilot intends to reach a deeper understanding of enabling factors and barriers for women to become and remain transport workers, to be replicated at a broader scale if successful.

The project was implemented collaboratively, and done in all SOLUTIONSplus Urban Living Labs. It brought together partners with complementary expertise.

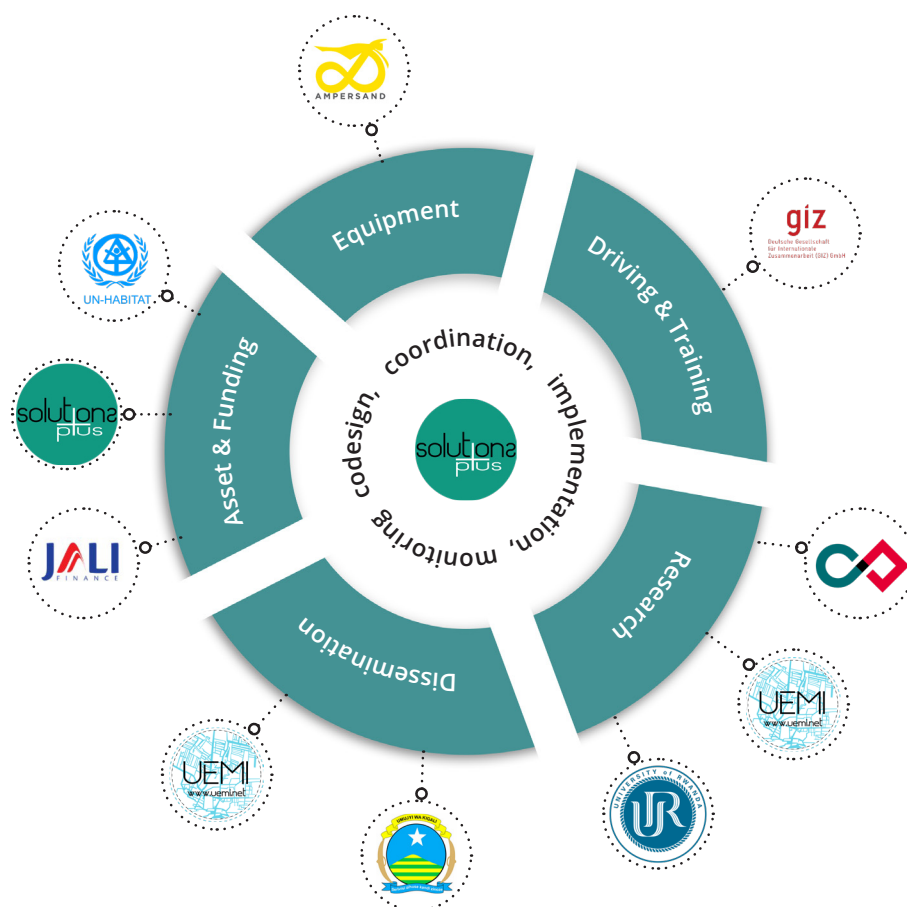


Figure 2: Capacity distribution among partners



## PROJECT TIMELINE - JOINING FORCES

2021, Q2



UN-Habitat, a SOLUTIONSplus consortium partner, awarded **grant funding** to Ampersand to support the development of locally designed and assembled electric motorcycles and to provide electric moto-taxis to female drivers.

2021, Q3-4



Fione Initiative, UEMI and UN-Habitat conducted a preliminary **assessment identifying success factors** for gender-inclusive projects and reasons for the failure of past projects in Kigali.

2022, Q1



GIZ joined the project to lead the **driving training** component, bringing its previous experience with driving schools and hiring the United Driving School to provide comprehensive training.

2022, May



**Kick-off** of the joint project in the presence of officials of the City of Kigali.

2022, Q2-3



Thirty-six (36) women were **recruited and trained** with an internal combustion engine (ICE) motorcycle for ten (10) weeks (1 hour per day, six days a week) by three female trainers from the United Driving School, supported by male instructors as necessary, under GIZ leadership and joint monitoring from project partners. One woman terminated the training earlier for personal reasons. The attendance rate was very high, with an average of 94.65%.

2022, Q3



The asset financing company Jali Finance joined the project to cater to the **extra financial needs**, since a higher number of women passed the driving exam compared to initial expectations.



## 2022, Q4



Participating women took the **driving exam** under protected conditions (open only to female candidates, no audience). The success rate of 68% is unprecedented in Kigali.

## 2022, August-September



UEMI and the University of Rwanda conducted a first **survey** with beneficiaries to better understand drivers and barriers to becoming moto-taxi drivers and perceptions of conventional and electric motorcycles, before introducing electric moto-taxis.

## 2022, October



Specific additional training to familiarise the women with an Ampersand **electric motorcycle** for ten (10) days, as practical training and licensing tests had been conducted with ICE motorcycles.

## 2022, November



Twenty-four (24) electric motorcycles from Ampersand financed by SOLUTIONSplus were **handed over to the women** having passed the exam in the presence of government officials.

## 2022, November-December



UEMI and the University of Rwanda conducted a digital and in-person **survey** with the wider female population in Kigali to understand perceptions of the activity of moto-taxi drivers.

A cooperative gathering the women was created.

## 2023, February



UEMI and the University of Rwanda conducted a second **survey** with participating women to assess evolution over time.

## 2021-2023

Constant monitoring of activities and challenges faced and exchange with potential stakeholders to scale up



## RESULTS

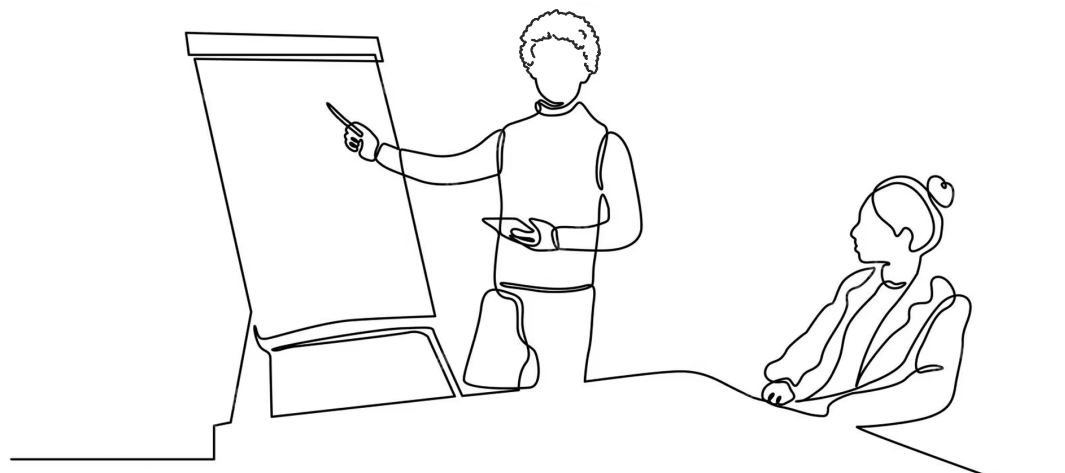
- ▶ Thirty-five (35) women trained.
- ▶ 68.57% obtaining a driving license (24 women).
- ▶ 24 e-motos handed over in November 2022

Five principles identified:

- # 1 **Planning**
- # 2 **Training**
- # 3 **Retaining**
- # 4 **Evaluating**
- # 5 **Disseminating**

# Principle 1: Planning

Co-design a project based on a thorough baseline assessment of local characteristics



## STEPS

## ACTIVITIES



### 1. Map the context

**Principle:** Conduct a contextual analysis to better understand the baseline situation before the implementation of the project. The context should be mapped through a thorough identification and review of the following:

- **Any prior gender-inclusive projects** in the geographic context, their success or failure, their impacts and potential learnings. The analysis of the success or failure of these projects should be accompanied by an investigation of factors explaining the outcome of these past or current projects (desk research, interviews on snowball sampling, possibly guaranteeing anonymity to create a safe space for discussion)
- **Literature** on the geographic context to identify characteristics of women's involvement in the transport sector, gender-based violence in public spaces and in the transport sector (to/from stations, at stations, in vehicles), and policies addressing gender-based violence (desk research).

Analysis of literature and prior projects should address these questions:

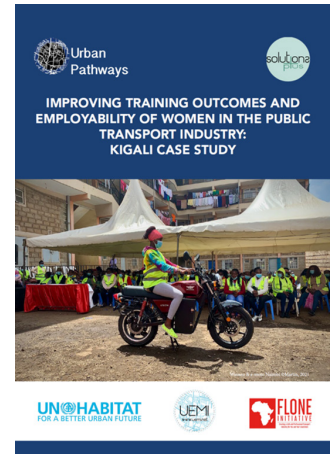
- › Are there vehicle types more conducive – e.g. providing physical separation with the drivers - or more challenging for women?
  - › Are women more active in specific economic activities in or around transport service provision?
  - › Are there specific use cases where women are more specifically active or that provide safer environments?
  - › Where is gender-based violence more likely to happen?
  - › Are there any supportive policies in place?
- Key stakeholders in the local context, for both gender and transport dimensions: civil society, public authorities, knowledge and research organisations, international organisations, companies with a strong gender focus, etc. (desk research, interviews via snowball sampling)

## STEPS

## ACTIVITIES

**Application in Kigali**

Flone Initiative, UEMI and UN-Habitat analysed the situation in Kigali, showing that previous gender-inclusive programmes had faced vital challenges.



The study found that:

- (a) the driving school was unable to deliver quality training (insufficient equipment, lack of knowledge of gender inclusion and training of women);
- (b) that there were situations of harassment during the driving training;
- (c) that the driving school was located too far from the residence location of the trainees, creating challenges for them to attend the training;
- (d) that the meals and transport costs were not sufficiently covered;
- (e) enabling conditions for the exam were not there as the exam took place in an outdoor space, where a crowd of interested people gathered, which put pressure on the women, leading to failure at the exam.

The study provided key practical recommendations to conduct a gender- inclusive training (selection criteria for driving school and participants, locations, incentives, institutional collaboration, monitoring, and anti-sexual harassment policies) and policies that transport companies can implement. These learnings were documented in the publication and integrated into the design of the e-moto gender-inclusive project.



### 1. Map the context

## STEPS

## ACTIVITIES

**Principle:** Refine the contextual analysis by identifying social norms explaining people’s knowledge, attitudes and beliefs in the specific location (Leon-Himmelstine et al., 2020). “Negative” gender norms in the transport sector may hinder increased participation of women in the transport workforce, such as situations of harassment considered as typical or not to be reported, men’s opinions being more listened to and having a more significant impact, etc. “Positive” gender norms, on the other hand, may also drive a change, for instance, when identifying situations where it is seen acceptable or desirable for women to be involved in transport or leveraging on innovations positively connoted, such as new or modern vehicles.

These questions can guide the process:



## 2. Understand gender norms

- › Are there cases where it is deemed acceptable for women to be involved in the transport sector?
- › What are women’s motivations to become active in the transport sector?
- › Could new vehicles, such as electric vehicles, be seen as a vector for modernity and improved social recognition or, on the contrary, create opposition from drivers of conventional vehicles?
- › Do companies or digital platforms provide female transport workers higher traceability and more security?

Application in Kigali: UEMI gained a deeper understanding of norms and perceptions through exchanges with GGGI, having conducted a focus group with female moto-taxi drivers in April 2019. Focus groups showed that their activity as moto-taxi female drivers was perceived as unusual but also represented a source of pride, strength, and a satisfying source of income. Financial issues and gender stereotypes were the main obstacles to gender inclusion. These women also stated that the government could help through ad-hoc projects targeting women and providing adequate financial assistance.

## STEPS

## ACTIVITIES

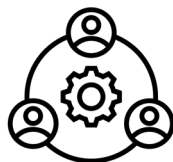
**Principle:** Design the project based on three building blocks:

- **Strategy or vision-building**

- › What is the aim of the project?
- › What is the expected impact? Which broader transformative change can it enable?
- › How does it address the local context and build upon past experiences?
- › Can the project create synergies and bring stakeholders together?

- **Implementation strategy**

- › What is the use case considered: passengers and/or deliveries?
- › Are the vehicles considered conducive or creating specific challenges for women, considering aspects of manoeuvrability, weight, physical separation if used to ferry passengers, and possible concomitant use for other purposes, including care duties (e.g. transport children to school)?
- › What are the risks associated with the project and mitigation strategies?
- › What are the prerequisites, e.g. driving training, if women do not have a driving license yet?
- › What are the costs for adequate safety equipment, insurance, etc.?



### 3. Co-design the project

**Collaborative approach** bringing together partners with complementary expertise and covering at least eight main areas:

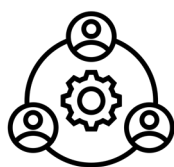
**Project coordination**, ideally through a local partner with a strong voice to represent the project. The involvement of a local champion and role models, e.g. female drivers, is desirable.

**Provision of equipment:** vehicles, charging infrastructure, batteries, spare parts, safety gear, software, if any.



## STEPS

## ACTIVITIES



### 3. Co-design the project

**Funding:** funding of the asset in total or part or facilitated access to finance, often representing a key barrier.

**Training** on driving if the women do not have driving licenses yet, electric vehicle specifics and training on further skills that can support the women such as training on rights and gender-based violence, business, customer care, self-defence, etc.

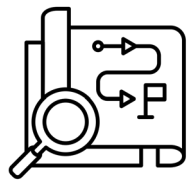
**Support to operate in a safe environment:** creating new structures such as a female-only moto-taxi cooperative (passenger use case) or involvement of delivery platforms or logistics companies (delivery use case). Delivery may provide easier operating conditions to women: lighter weights of packages compared to passengers, no physical contact with men, and operations outside of male-dominated waiting points.

**Monitoring and research** into project implementation, perception of participation, barriers and drivers for a more significant uptake.

**Policy and institutional support** from government authorities to tackle any potential policy barriers and create buy-in for scale-up

**Dissemination** of learnings at local and regional levels.

## STEPS



#### 4. Co-design a monitoring plan

## ACTIVITIES

**Principle:** Develop a monitoring, evaluation, and learning plan.

Gender-inclusive projects will likely encounter challenges, as women are currently underrepresented in the transport sector and faced with gender-based violence. Change in gender norms takes time, which requires monitoring over sufficient time. Regular and long-term monitoring, feedback loops, and information transparency are all necessary to ensure a meaningful impact beyond a simple pilot. Safe conditions for women to report any potential issues in the project are critical.





# Principle 2: Training

Create empowering conditions for the driving training, needed if women do not have a license



## STEPS

## ACTIVITIES



### 1. Select a cohort of trainees

**Principle:** Identify an **appropriate cohort size** adequate to the capacity of the driving school. Suppose very few women are active in the transport sector. In that case, it is advised to start with small cohorts to ensure close monitoring of the training, of individual situations and to avoid crowded driving training. In Kigali, a cohort of 35 women was enrolled in the joint project, namely a much smaller size compared to previous projects going up to a few hundred women and facing challenges during the training.

**Principle:** Identify a set of **clear beneficiary selection criteria** to recruit highly interested beneficiaries, likely to be able to go through the entire training program and work as drivers. In Kigali, an issue was identified a posteriori of a few beneficiaries whose health issues did not enable them to work full-time as moto-taxi drivers, or who were not aware of the vehicle weight and its physical requirements. Consequently, the project recommends other regional gender-inclusive projects to include a criterion of good health condition and be apparent during the selection process about the physical requirements of vehicle weight and ferry passengers.

**Principle:** Recruit **interested participants** who are curious to learn and likely to be committed. Collaboration with industry players such as transport companies and local NGOs may facilitate the identification of potential candidates. A small commitment fee should be considered to ensure the selection of candidates who can complete the course.

## STEPS

## ACTIVITIES

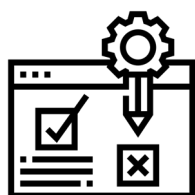


## 2. Select a suitable driving school

**Principle:** Select a driving school after a **competitive bidding process**, including minimum requirements and bonuses. The selection should grant bonuses to driving schools already having experience training women, having female trainers, or being gender-conscious through an anti-sexual harassment policy, for instance. The driving school should have enough vehicles to avoid situations where trainees must share a vehicle and wait for their turn, thus reducing training time. In Kigali, GIZ followed the recommendation from Flone Initiative and selected a driving school with experience in training women and female trainers. The school created a unique program for the women and allocated specific instructors for quality control and assurance.

**Principle:** Ensure **safety** during the training and after. In Kigali, one of the requirements the driving school had to meet was insurance for training vehicles that also covered the trainees. The vehicles used for the training were fully insured under a driving school insurance policy. For the period after the driving license, UN-Habitat's funding under SOLUTIONSplus covered comprehensive insurance for two years, maintenance, and 35 helmets provided by Ampersand.

## STEPS



### 3. Ensure supportive training conditions

## ACTIVITIES

**Principle:** Ensure **favourable financial and convenient geographical conditions** for the women to attend the training and reduce risks of participants dropping out. In Kigali, the driving training took place on the training ground of United Driving School, located in a location easily accessible to all participants. The venue was isolated from the public with a fence. One participant living outside Kigali could take the training from the school branch in her district. In addition, appropriate financial support was provided by covering daily transport fees. Allowances were readjusted following feedback from the trainees about economic difficulties in the context of the COVID-19 pandemic.

**Principle:** Conduct a thorough **monitoring** of the driving training work and cases of sexual and gender-based violence. If such situations occur, ensure they are addressed promptly and with discretion.

**Principle:** Raise **awareness** of the driving school on harassment, for instance, via gender sensitisation trainings, and support the school in developing gender-sensitive policies.





## STEPS



#### 4. Ensure conducive driving exam conditions


## ACTIVITIES

**Principle:** Assess whether the driving exam may occur in a **protected environment** since open driving spaces may attract people gathering. This risk exists especially if it is not common for women to take a driving exam or with the specific vehicle considered in the project. In Kigali, previous projects had attracted crowd gatherings, which put pressure on the women and reduced their chances to pass the exam.

In the joint project, GIZ partnered with the Rwanda National Police to allow a driving exam with the exact requirements but open to female candidates only.

As the training was approaching the examination day, the school organised five training sessions in the exam venue. Changing the training ground aimed to help trainees become familiar with the testing ground and avoid stress during the exam.



STEPS	ACTIVITIES
 <p data-bbox="461 958 692 1055"><b>5. Train women with the electric motorcycle</b></p>	<p data-bbox="767 499 1497 808"><b>Principle:</b> Following the training with an ICE motorcycle - usually used by driving schools and at the driving exam -, provide <b>training with an electric motorcycle</b>, addressing various aspects including driving, charging or battery swapping, safety, sustainable use of the battery and consumption levels etc. In Kigali: Ampersand provided additional training in October 2022, addressing training topics:</p> <ul data-bbox="767 857 1497 1368" style="list-style-type: none"> <li>› Know your electric motorcycle: this covered the difference between an electric motorcycles and fuel motorcycles.</li> <li>› Operating a electric motorcycle.</li> <li>› Taking care of an electric motorcycle, its battery and on how to get support if needed.</li> <li>› The benefit of using an electric motorcycle.</li> <li>› Mastering the driving: this covered driving on road with a trainer and driving alone.</li> </ul>



# Principle 3: Retaining

Ensuring supportive conditions for women to use vehicles in real-life conditions



## STEPS



**1. Tackle potential challenges before and during the training**

## ACTIVITIES

**Principle:** In the set of beneficiary criteria used to recruit the participants (see Principle #2), **be clear about the implications and risks of driving a moto-taxi** on a physical level (e.g. vehicle weight, physical involvement) as well as organisational and financial (e.g. high intensity and long hours). In Kigali, as mentioned in #2, project partners identified a posteriori that these implications should have been communicated more clearly. It is recommended that scale-up projects mention these implications before the start of their training programme. During the training, safe spaces for exchange between the women should be established for them to keep discussing future operations, compatibility of long hours with care duties, and possible solutions.

**Principle:** **Embed male family members at key moments of the project** to create a sense of pride and stress the gender-inclusive dimension of the project. This could be done during the kick-off ceremony or handing over driving licenses or vehicles. This is essential: experience and literature (e.g. Porter, 2011) show that it is not uncommon for male family members to attempt to use or own the vehicle in place of the female beneficiary.

## STEPS

## ACTIVITIES

**Principle:** Consider the pros and cons for women to be **active in passenger services (taxi) or delivery services**. This assessment should consider the women's safety, working hours, physical implications, a delivery market, expected revenues, and ride-hailing or delivery platforms interested in supporting the women.

In Kigali and East Africa, operating as a taxi to ferry passengers implies waiting for passengers, often in the exact location as other male drivers. This can increase the risks of gender-based violence. Risks also exist through physical proximity with passengers on the motorcycle.



## 2. Assess the pros and cons of passenger versus delivery services



For these reasons, the **delivery market is generally considered an easier and safer entry point for women**. In a study conducted in Kenya, 70% of interviewed women preferred delivery over taxi services (BCG Green Ventures, 2022). In the Kigali project, it was observed that two women dramatically increased their use rate of the motorcycle once they joined the delivery company Vuba Vuba, from 41 and 53% in March 2022 to 100% for April to June (use rate measured in percentage of battery swapping fees paid with the beneficiary's phone number). Recently, innovative business models have been increasing in Kigali, with companies such as VubaVuba, YegoMoto or SafiRun providing the option to order groceries or consumer goods online or by phone, the national postal service offering parcel delivery,

## STEPS



## 2. Assess the pros and cons of passenger versus delivery services

## ACTIVITIES

and restaurants across town offering home delivery. However, the logistics market is still small in Kigali, which constrains the possibility of using this option for gender-inclusive projects. Such projects should explore potential collaboration with the 25 licensed goods transportation companies all over Rwanda, 27 licensed postal and courier operators and 13 licensed freight forwarders (RURA, 2021).

To confirm and investigate the potential of gender-inclusive deliveries, SOLUTIONSplus decided to replicate the Kigali gender-inclusive e-moto project in Nairobi, focusing exclusively on urban deliveries. Grant funding was awarded to the e-mobility company Stima for use with fleet management companies and companies such as Little delivering food for commercial centres such as Carrefour or Bolt Food, or financial institutions like the Kenya Commercial Bank.

If deliveries are not possible or desired, strategies can help mitigate risks associated with passenger taxi services beyond the minimum requirement of providing comprehensive insurance (see Principle #2).

- › Creating a dedicated structure or space for women to operate together can improve their conditions by jointly identifying customers, creating female-only waiting points, or creating a community of support and space to discuss possible issues. In Kigali, a female motorcycle cooperative was formed for the project's beneficiaries. In Uganda, the electric mobility company Zembo selected in the SOLUTIONSplus replication phase, supported a women-only stage shown in the picture below.



## STEPS



**2. Assess the pros and cons of passenger versus delivery services**

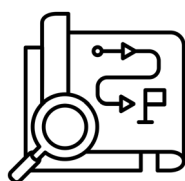
## ACTIVITIES

Another option is to partner with ride-hail platforms, which may **allow women passengers to choose women riders** to reduce the risk of sexual harassment for drivers and passengers and provide higher safety and traceability through passenger registration and GPS tracking. One step further is to create a new ride-hail platform catering solely to female passengers and riders, such as the An Nisa Taxi company providing female car taxi services in Nairobi.

Lastly, working hours should be flexible and prioritise operation in the **daytime** since operating at night increases risks of violence and may not be compatible with the care duties of the beneficiaries. In Nairobi, a study found that 62% of interviewed women preferred daytime riding (BCG Green Ventures, 2022). As operating only during the daytime will limit the women's earnings, gender-inclusive projects should discuss impacts, e.g. allowing to share the motorcycle with another driver for operations at dark.



## STEPS



### 3. Monitor over sufficient time and transparently address issues

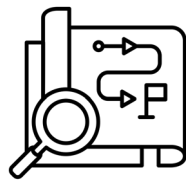
## ACTIVITIES

**Principle: Constantly monitor** the needs and possible challenges women face, such as any accidents, gender-based violence situations experienced, challenges to combining working hours and care duties, etc. Transparently identifying issues is critical: gender-inclusive projects are likely to face challenges in male-dominated spaces or gender-based violence contexts. Difficulties should be identified – providing complete confidentiality to the beneficiaries facing issues and safe spaces (see below) – to learn and possibly adapt the project or follow-up projects.

In Kigali, partners have monitored operations monthly since the reception of the vehicles in November 2022. Three main challenges were identified:

- › **Health or physical issues:** A few women found out that the physical requirement of riding a motorcycle was not compatible with their medical situation or not anymore due to changes in their lives, for instance, a pregnancy. In these situations, motorcycles were handed over to other drivers. Project partners identified the need to communicate strongly on physical implications during the selection process and training (see Principle #2).
- › **Request to share the motorcycle** with another driver, for instance, someone driving at dark. To maintain the gender-inclusive focus, project partners first asked to share the motorcycle with another female driver on the waiting list, which was challenging to implement. A minimum requirement was to register the additional driver to ensure proper and safe operations. Project partners agreed on the need to better understand the extent of sharing practices. While temporary sharing may be explained by specific situations faced by the women (e.g. avoiding riding and risky situations at night, being busy with family care duties late afternoon and evening), the project should control that male family members are not exerting pressure on the women

## STEPS



### 3. Monitor over sufficient time and transparently address issues

## ACTIVITIES

to use their motorcycles. Partners, therefore, agreed to monitor the use of the motorcycle through the payment of battery swapping fees, and to create safe spaces for reporting and discussion (see below).

- › Road safety: Two accidents occurred. Providing support, including psychological support, is critical if accidents occur. Project partners authorised an additional driver for a defined short period until the persons could ride again.

**Principle:** Create safe spaces for discussion. In Kigali, UN-Habitat suggested organising interviews and focus groups led by a woman (women-only group) to create an environment where women would feel comfortable mentioning personal challenges. As a principle, gender-inclusive project partners should not work with presumptions – primarily when encountering challenges – but work together in safe communication.

## STEPS



### 4. Provide continuous training

## ACTIVITIES

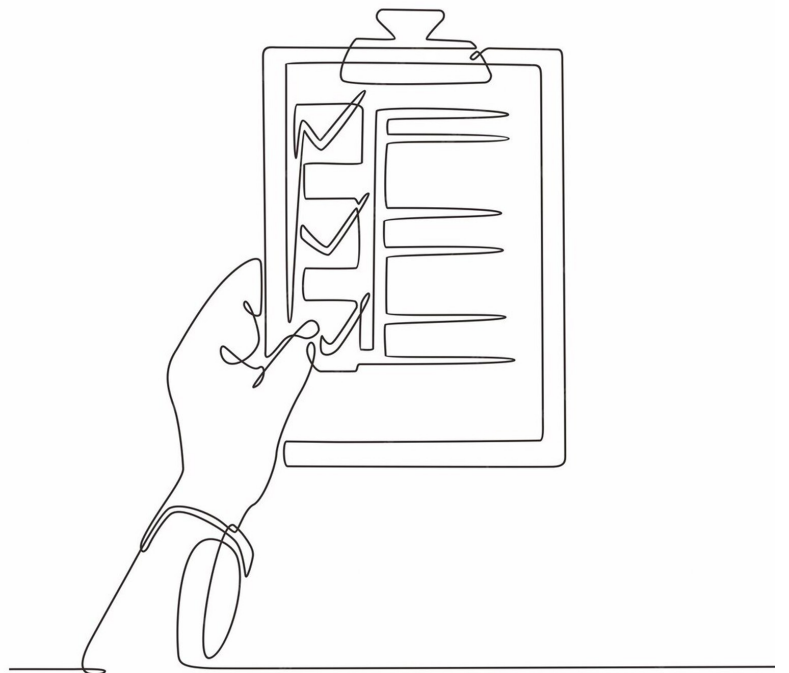
**Principle:** Provide further training to women on their rights and on skills which can facilitate their business. In Kigali, trainings were provided by the GIZ on their rights and various skills, including English-speaking skills, map navigation, customer services, and self-defence.





# Principle 4: Evaluating

Understanding perceptions and monitoring the project over sufficient time

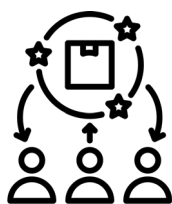


## STEPS

## ACTIVITIES

**Principle:** Understand better the **perceptions of the trained women** regarding the motivating factors and barriers to becoming active in the transport sector and the specific vehicle considered.

In Kigali, UEMI and the University of Rwanda conducted a study with trained women on perceptions of ICE and e-motos and barriers and motivations to becoming a driver. This study was implemented in two stages. First, a survey was conducted before the training with electric motorcycles (35 trained women, Part A). Here are some key learnings:



### 1. Understand perceptions of trained women

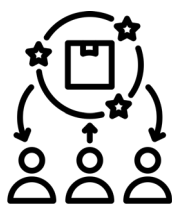
- › **Reasons for becoming a female moto-taxi driver** include personal economic empowerment, long-term financial stability, well-being and support of education of family members. Furthermore, by becoming moto-taxi drivers, women see themselves as catalysts for progress in Rwanda's transport sector. The women aspire to positively impact society by demonstrating the "unbelievable work" that women can do and inspiring others to seize opportunities in the transportation industry.

*"We are women looking to show we can do what men can."*

*"People need to change their beliefs, what a man does, a woman can do. It is women's responsibility to show their ability is not limited."*

- › **Barriers to becoming a female moto-taxi driver** relate to road safety, technical and operational expertise, and working hours. Twenty-two (22) women agreed or strongly agreed that female drivers may have road safety concerns, while 25 out of 35 agreed or strongly agreed that women may lack driving experience. In addition, 18 respondents agreed that the working hours are unfavourable, and 22 said the workload for women drivers may be too high or the shifts too long. On the other hand,

## STEPS



### 1. Understand perceptions of trained women

## ACTIVITIES

25 women disagreed or strongly disagreed with the potential barrier that women are often not morally and financially supported by their families.

- › **Ways to support female moto-taxi drivers** include the desire for additional technical training (e.g. technical knowledge about motos, maintenance) and safety training (e.g. self-protection, first aid, driving behaviour). In addition, the women wish for additional promotion campaigns to motivate women to get into the profession.

Applying the principle of regular monitoring under safe conditions (see Principle #3), a follow-up survey was conducted **after training with the electric motorcycles** (24 women having completed the program, Part B). Here are some key highlights of the interim evaluation:

- › **Operation of electric moto-taxis:** Out of the 24 women surveyed, 20 chose the best or second-best rating for their experience operating electric motorcycles, and almost 70% of the women found riding the e-motorcycle very easy.
- › **Challenges of being a female moto-taxi driver:** While the overall experience seemed positive, the women also pointed out new challenges. These include the costs of spare parts required to repair broken parts. In addition, there were reports of two women being involved in road accidents. Lastly, some women reported adverse effects on their health, such as back pain and irregular periods since they started working as moto-taxi drivers. Fatigue was also mentioned, with one woman stating that she could not “work full time like men” because of these problems. The project partners identified the need to further address feedback by creating safe spaces via a women-only focus group.

## STEPS



## 2. Understand perceptions of the wider female population

## ACTIVITIES

**Principle:** Understand better the **perceptions of the wider female population** in Kigali to compare with and contrast with the findings from the cohort. UEMI and the University of Rwanda conducted a more extensive study with similar questions to the ones asked to the trained cohort but open to the female population in Kigali. After an interim analysis of the results, it was found that the group of respondents was relatively homogeneous, which led to additional face-to-face surveys to complement the online survey, resulting in a total of 322 valid responses.

- › **Perceived barriers:** 83 % of women either agree or strongly agree that women do not want to work as moto-taxi drivers during night hours due to family care responsibilities. Contrary to the study with trained women, 80% of respondents said that women drivers often lack moral and financial support from their families. Notably, 81% of respondents agree or strongly agree that female drivers are likely to experience gender-based harassment. This is a crucial learning when identifying safe operational models (see Principle #3 Retaining). Lastly, 70% of respondents identified road safety concerns as a potential barrier to women drivers.
- › **Motivations for becoming a moto-taxi driver:** Only 11 % said they have experience driving a motorcycle, yet 43 % are open to becoming a moto-taxi driver. Among the highest-ranked motivations are the desire to improve one's financial situation and to support the family, closely followed by the desire to expand career opportunities.
- › **Suitable measures to promote the moto-taxi profession for women:** The most supported strategy is introducing subsidised loans specifically for women (88%), followed by driver training campaigns exclusively for women (85%) and special training exams and media campaigns focusing on female taxi drivers (both at 84%). Media campaigns to raise awareness of gender harassment are ranked lowest (72%) but still as important.



STEPS

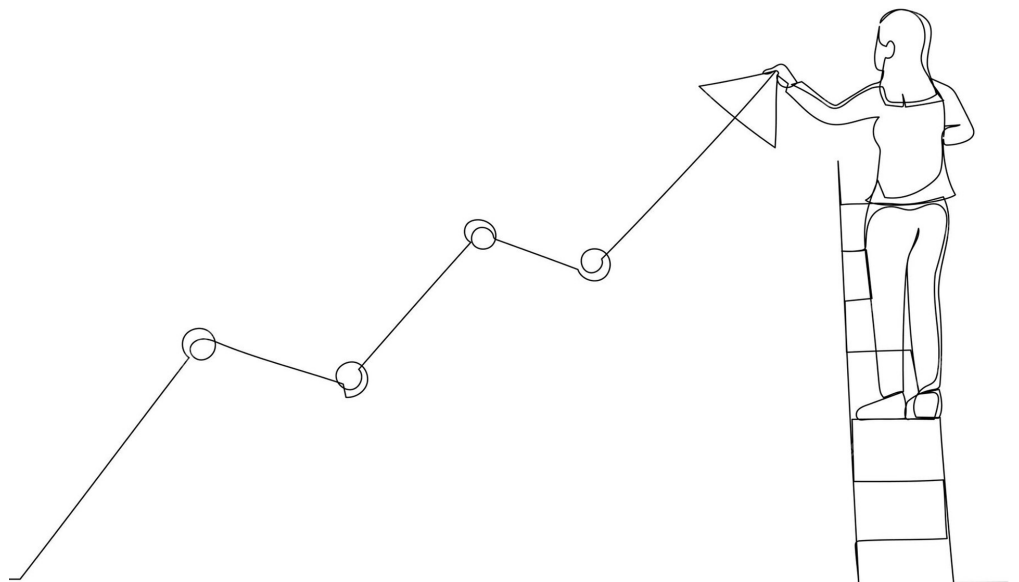
ACTIVITIES





# Principle 5: Disseminating and scaling

Peer learning and replication at various scales



## STEPS

## ACTIVITIES

**Principle:** Organise **exchanges with like-minded organisations** implementing similar projects under the umbrella of governmental institutions or universities.


In Kigali, various discussions were held between the City of Kigali, UEMI, Flone Initiative and other e-mobility companies integrating a gender-inclusive focus in their work, such as Safiride or the bike-sharing provider Guraride. For instance, Safiride launched a women empowerment project on electric motorcycles jointly with the City of Kigali and the Ministry of Gender and Family Promotion, as seen in the picture below. Project partners recommend future projects to set up a platform or committee under the co-sharing of the City of Kigali and the Ministry of Gender and Family Promotion to widely share findings.




### 1. Exchange with similar projects in the city and scale



**Principle:** **Scale successful components** of the joint gender-inclusive e-moto project. To ensure the long-term sustainability of efforts, UEMI supported the World Bank for a joint application to the Youth Initiative Fund, looking at replication in Kigali and at a regional level. This application was successful during the second round. UEMI also exchanged with ICLEI Africa and Carbon Trust, involved in the e-moto proposal to the NAMA Facility, to support their gender analysis and action plan for gender inclusion. Project partners recommend the

STEPS	ACTIVITIES
 <p data-bbox="448 1339 703 1442"><b>1. Exchange with similar projects in the city and scale</b></p>	<p data-bbox="767 499 1034 533">follow-up project to:</p> <ul style="list-style-type: none"> <li data-bbox="767 577 1313 611">› <b>Follow the five principles approach</b></li> <li data-bbox="767 656 1500 853">› <b>Apply recommendations on the suitable cohort size</b> as developed in Principle #2, as positive outcomes of the training were possible through smaller cohorts matching the driving school's capacity</li> <li data-bbox="767 898 1500 1211">› <b>Put specific care into identifying safe operations</b> in delivery services (preferred) – or passenger services, applying risk mitigation strategies developed in Principle #3, and looking for partnerships with ride-hail platforms, e-commerce and delivery companies, or institutional customers for deliveries. Choosing safe business models that reduce the risks of harassment should be a priority.</li> <li data-bbox="767 1256 1500 1368">› <b>Put specific care into ensuring safe exchange spaces</b> and developing a community of support via a network of women in transport</li> <li data-bbox="767 1413 1500 1964">› Build upon the pilot by adding new building blocks, such as: <ul style="list-style-type: none"> <li data-bbox="815 1536 1500 1648">› A platform or committee under the co-sharing of the City and the Ministry of Gender and Family Promotion (see above),</li> <li data-bbox="815 1659 1500 1964">› Through increased awareness-raising and media communication (printed, digital media) to work on cultural norms and reinforce a positive image of women in transport. Community events in Rwanda, such as Umuganda, could create an opportunity to spread information about the project and discuss perceptions and barriers for women in transport</li> </ul> </li> </ul>

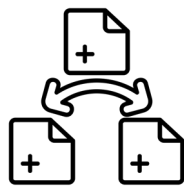
**Principle: Discuss policy implications** and to what extent the pilot may contribute to gender-inclusive policy directions or reveal persisting gaps. As highlighted

STEPS	ACTIVITIES
 <p data-bbox="448 1339 703 1442"><b>1. Exchange with similar projects in the city and scale</b></p>	<p data-bbox="767 499 1497 846">in UNEP and Fione Initiative’s study in Kenya (Fione Initiative, 2022), findings from surveys and projects must be shared with policymakers since current transport policies and legal frameworks fail to explicitly recognise gender-differentiated mobility patterns. To this effect, gender audits of existing regulations and policies should be conducted, and social or gender experts should be actively involved in policy formulation, implementation and monitoring.</p> <p data-bbox="767 898 1497 1525">In Kigali, such pilots can contribute to the targets of the National Transport Policy and Strategy for Rwanda (2021), which aims to significantly increase the current 2.6% of female workers in the transport sector to 30% by 2034/2035. To that aim, the policy identifies three directions to improve gender balance: creating an enabling environment to enable equality, raising awareness for girls to enrol in STEM (Science, Technology, Engineering and Math) in view of entering the transport sector, and strengthening existing mechanisms to prevent and respond to gender-based violence in the transport sector. This pilot shows that quality training and awareness of the driving school on gender-based violence is critical; a recommendation is that driving schools should have a company policy and procedures to address gender-based violence.</p>

## STEPS

## ACTIVITIES

- Identify interest and opportunity to replicate the gender-inclusive project in other cities in the same country or regional level. In its regional call for replication, SOLUTIONSplus awarded grant funding companies all putting a gender-inclusive focus at the core of their project: Zembo's electric motorcycles (Uganda, picture below), Stima's electric motorcycles (Kenya), East African Rural Mobility's electric three-wheelers (Kenya), Wahu! (former MANA Mobility)'s electric bicycles (Togo) and Mobile Power's electric motorcycles (Sierra Leone). A peer learning session will be held in the last quarter of 2023 to discuss projects, challenges and ways forward to spearhead a gender-inclusive transformation.



## 2. Replicate in other locations



- Leverage solid organisations of women in transport active at a national or regional level, such as the Flone Initiative active in Kenya.





STEPS

ACTIVITIES



3. Think about other segments of the value chain

**Principle:** Consider the **involvement of women in other segments** of the industry, such as vehicle or battery assembly, maintenance and repairs, or as battery swapping attendants. For example, Ampersand’s workforce comprises 30% women in all countries, and 50% of its assembly and swap attendants are women.

**Principle:** At an institutional level, consider how to **improve the enrolment of women in Science, Technology and Mathematics (STEM)**, for instance, by providing scholarships, organising fairs, or organising university exchanges and visits with a specific gender focus.



STEPS

ACTIVITIES



4. Think of other vehicle types

- **Consider opportunities provided by other vehicle types**, such as electric three-wheelers or electric bicycles. Three-wheelers allow physical separation between the driver and passengers, as seen in the Safa Tempos example, or allow women to transport goods in rural or peri-urban areas. In Zimbabwe, the social enterprise Mobility for Africa provides robust electric tricycles to women farmers living in rural areas. SOLUTIONSplus also explores opportunities of this model by supporting the company East African Rural Mobility and Smart Villages based in Kenya, using electric three-wheelers to transport milk, banana and organic waste with black soldier fly production value chains.

## STEPS

## ACTIVITIES



#### 4. Think of other vehicle types

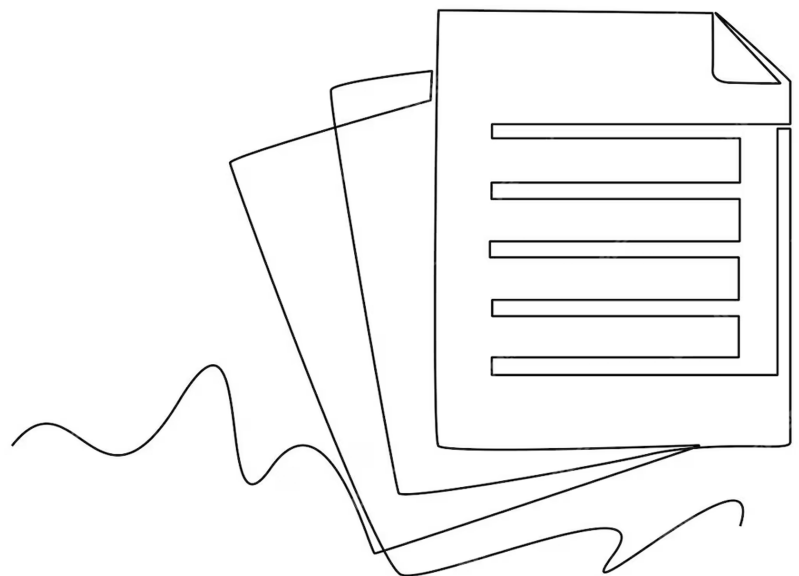
Do not ignore barriers faced by sustainable modes such as bicycles. In Kigali, exchanges revealed negative perceptions for women to cycle, even in the context of internationally recognised sport cycling events. Since bicycles (conventional and electric) can critically contribute to greener mobility, future awareness-raising campaigns and institutions should decisively promote cycling for women.

The bikeshare company Guraride works towards increasing the involvement of women: half of its bicycle assembling team are women. At the same time, all bikeshare station attendants are women who also alternate as assembling staff and repair technicians.





# Abbreviations, Glossary & List of References



## ABBREVIATIONS

<b>BAK</b>	Boda Boda Safety Association of Kenya
<b>CCTV</b>	Closed-circuit television
<b>COK</b>	City of Kigali
<b>COVID-19</b>	Coronavirus disease 2019
<b>GBHV</b>	Gender-Based Violence and Harassment
<b>GGGI</b>	Global Green Growth Institute
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
<b>GPS</b>	Global Positioning System
<b>ICE</b>	Internal Combustion Engine
<b>ICLEI</b>	International Council for Local Environmental Initiatives
<b>ITDP</b>	Institute for Transportation & Development Policy
<b>KEVA</b>	Kathmandu Electric Vehicle Alliance
<b>NAMA</b>	Nationally Appropriate Mitigation Action
<b>NGO</b>	Non-Governmental Organisation
<b>PTW</b>	Powered Two- and Three-Wheeler
<b>SDG</b>	Sustainable Development Goals
<b>SMS</b>	Short Message Service
<b>STEM</b>	Science, Technology and Mathematics
<b>TV</b>	Television
<b>UEMI</b>	Urban Electric Mobility Initiative
<b>ULLC</b>	Urban Living Lab Center

<b>UN</b>	United Nations
<b>UNEP</b>	United Nations Environment Programme
<b>UNEP-CCC</b>	UNEP Copenhagen Climate Centre
<b>UNFPA</b>	United Nations Population Fund
<b>UN-Habitat</b>	United Nations Human Settlements Programme
<b>USD</b>	US Dollar

## **GLOSSARY**

### **GENDER**

“Gender refers to the characteristics of women, men, girls and boys that are socially constructed. This includes norms, behaviours and roles associated with being a woman, man, girl or boy, as well as relationships with each other. As a social construct, gender varies from society to society and can change over time.” (WHO, n.d.)

“Gender interacts with but is different from sex, which refers to the different biological and physiological characteristics of females, males and intersex persons, such as chromosomes, hormones and reproductive organs. Gender and sex are related to but different from gender identity. Gender identity refers to a person’s deeply felt, internal and individual experience of gender, which may or may not correspond to the person’s physiology or designated sex at birth.” (WHO, n.d.)

### **GENDER MAINSTREAMING**

“The process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in all areas and at all levels. It is a way to make women’s as well as men’s concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated.”

## SEXUAL HARASSMENT

“Sexual harassment is understood as verbal, non-verbal, or physical actions which are imposed on an individual as an unwanted and unwelcome sexual behaviour that interferes with someone’s life, including sexual comments, jokes, gestures, unwanted kissing, touching, flirting, stalking, explicit or implicit sexual advances, whistling, and offensive stares” (Leon-Himmelstine et al., 2020)

## SOCIAL NORMS

“Social norms are commonly described as a set of informal rules or shared expectations among a group of people as to how people should behave. They shape what people believe is typical and/or appropriate behaviour in a certain context » (Leon-Himmelstine et al., 2020)

## GENDER TRANSFORMATIVE

“An approach or process which shifts unequal gender relations to promote shared power, control of resources, decision-making, and support for women’s empowerment.” (UN Women, n.d.)



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## ICONS & FIGURES

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## PROJECT PARTNERS



