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Technology Executive Committee

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Draft TEC brief on gender-responsive technology and infrastructure for sustainable urban mobility

Cover note

I. Background

1. At TEC 24, the TEC agreed on the preparation of a publication on gender and technology and decided to further discuss this activity in the context of the development of the new TEC rolling workplan.

2. At TEC 25, the TEC considered a concept note[1] prepared by its gender focal points on a policy brief on gender and technology and agreed to prepare a policy brief on gender-inclusive technology and infrastructure for sustainable road mobility, with a view to considering a draft outline of the policy brief at TEC26 and finalizing the brief after TEC 27. The TEC agreed to carry over this activity to the TEC rolling workplan for 2023–2027,[2] under activity D.4, to be implemented in collaboration and engagement with the UNFCCC Gender Team.

3. Since the launch of the TEC rolling workplan for 2023–2027, the secretariat in consultations with the TEC gender focal points has developed a draft policy brief on gender-responsive technology and infrastructure for sustainable urban mobility.

II. Scope of the note

4. The annex to this note contains the draft policy brief on gender-responsive technology and infrastructure for sustainable urban mobility, which features examples from gender-responsive approaches and solutions in urban mobility, including those from the technical assistance provided by the CTCN.

III. Expected action by the Technology Executive Committee

5. The TEC will be invited to consider the draft policy brief and provide guidance on further work on this matter, in particular:

(a) Appropriate next steps and potential amendments for the finalization of the content of the policy brief;

(b) The timeline for the finalization of the policy brief.

[1] TEC/2022/25/13.

[2] TEC rolling work plan 2023–2027.

Annex

Draft TEC brief on gender-responsive technology and infrastructure for sustainable urban mobility

I. Why this TEC Brief?

1. This TEC brief elaborates on the role of climate-informed technology policy and action in the urban transport sector through a gender lens. The significance of low-emission and resilient transport technologies and infrastructure is widely recognized in achieving the development and climate goals (Box 1). This TEC policy brief is prepared to:

(a) Contribute to the development of high-quality and technology-related gender-responsive mobility solutions that may assist policy-making and legislative processes to build up policies, measures, and systems that respond more effectively to the needs of all members of the society;

(b) Respond to an urgent need to address gender concerns and experience as an integral dimension of planning, designing, implementing, and using sustainable mobility technologies and infrastructure;

(c) Shed light on and raise awareness of gender inequalities and differences in urban mobility, and through multiple examples and lessons learned of overcoming challenges, serve as inspiration to national and local policy makers, relevant stakeholders, and local communities to take action.

2. This brief explores the following questions:

(a) What are gender differences and disparities in in interacting with urban mobility systems, and how can sustainable mobility policies address these? (Chapter IV);

(b) What are the challenges to gender-responsive urban mobility and how they can be addressed by policy makers, communities, and other stakeholders? (Chapter VI);

(c) What are good practices of gender-responsive urban mobility that foster and enhance gender-responsive mobility systems in cities? (Chapter VII).

Box 1
Transport in the 2030 agenda for sustainable development
Target 11.2 of the Sustainable Development Goals (SDGs), is to: “by 2023, provide access to safe, affordable, accessible and sustainable transport system 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”. To monitor the progress on this target, the information is disaggregated by sex, age, and persons with disability.

II. Highlights

3. This TEC brief discusses sustainable urban mobility through a gender lens, and touches upon related technologies and infrastructure, challenges, development options, and good practices. It shows trends in urban mobility and the increasing need for gender-responsive measures and practices to be implemented. It shows several findings as to why gender issues should be systematically considered and integrated in urban mobility systems and services.

4. The TEC brief further discusses gender-based differences in interacting with urban mobility systems, including travel behavior patterns and social norms inhibiting certain travel options. Additionally, the brief spotlights gender disparities in availability, accessibility, affordability, and safety (in its two core elements which are safety from accidents and safety from violence) of mobility systems and services. The TEC brief also highlights a number of key challenges to achieving gender-responsive urban mobility that have to do with the broader policy landscape and systems at the

national and sub-national levels, e.g. planning and budgeting frameworks, education and employment systems, as well as issues related to urban governance.

5. The differences, disparities, and challenges highlighted in the TEC brief are responded to with a variety of options and good practices, i.e. suggested measures that may impact the demand for and use-patterns of transport infrastructure for all, but particularly women and vulnerable groups, and those that could foster enhanced representation and participation of all genders across the mobility systems by fostering enabling environments.

6. The TEC brief, including its multiple examples of overcoming challenges, good practices, and lessons learned responds to the initial questions (section I), and offer tailored considerations for mobility stakeholders that may inspire action by policy makers at the national and local levels, as well as communities, academia, private sector and international actors working towards gender-responsive sustainable urban mobility.

III. Background

7. Home to a growing majority of the world's population, and accounting for about 70 percent of global GHG emissions, sustainable urban areas play a key role in achieving the goals of the Paris Agreement, the New Urban Agenda (NUA) agreed at Habitat III Conference in 2016 and the 2030 Agenda for Sustainable Development. Achieving "safe, affordable, accessible and sustainable transport systems" that leave no one behind is not merely a technological issue, as it is cross-cutting, including social, economic, cultural, and environmental aspects.

8. There is a growing awareness among Parties to the UNFCCC that gender-responsive climate policy is more effective in yielding lasting impact for climate and development agendas, and a necessity to meet the goals of the Paris Agreement. The enhanced Lima work programme on gender (LWPG) and its gender action plan promote gender equality and women's empowerment in the UNFCCC process, including the work of constituted bodies. The COP through Decision -/CP.27, paragraph 14, encourages the full engagement of men and boys as agents and beneficiaries of change and as strategic partners and allies in achieving gender equality and the empowerment of all women and girls.

9. The Action for Climate Empowerment (ACE) process under the UNFCCC, which aims to empower all members of society to engage in climate action, also promotes gender-responsiveness, gender equality and empowerment of women through the six ACE elements - climate change education and public awareness, training, public participation, public access to information, and international cooperation on these issues.

10. The COP through decision 21/CP.22 requested that all constituted bodies include in their regular reports progress made towards the integration of gender perspectives in their respective processes. Similarly, COP decision 24/CP.27 encourages constituted bodies to continue to support action and implementation of the enhance LWPG and its GAP. The technology framework under Article 10, paragraph 4, of the Paris Agreement sets out ways in which gender should be considered in work relating to climate technologies under all key themes of the Technology Framework. In its rolling workplan for 2019–2022, the TEC committed to incorporating gender considerations into its work.

11. Under the 'Enabling Environment and Capacity-building' work stream of its 2019-2022 workplan, the TEC conducted a survey to assess needs, challenges, gaps and enabling environments to promote endogenous capacities and technologies, including the capacity of stakeholders to address cross-cutting issues such as gender responsiveness in their efforts. Under the same workstream, the TEC undertook efforts to identify challenges and opportunities to strengthen enabling environments for sustainable transport.

12. Along the same line of work, in 2022, the TEC published a technical paper on decarbonization technologies for sustainable road mobility (UNFCCC TEC 2022). At its 25th meeting, the committee concluded that the TEC work on sustainable transport offers the opportunity for an analysis of gender-responsive solutions in urban mobility that is complementary to and informed by the work of the TEC and the CTCN.

13. The TEC, as part of a joint activity with the CTCN on Gender and technology, has committed to provide guidance to their secretariats in developing and maintaining a roster of female experts in the field of climate technology, and female and male gender experts in the area of climate change.

14. The current brief benefits from the outcomes of the abovementioned efforts and will inform the work of the TEC in the implementation of its 2023-2027 rolling workplan, as part of the joint work programme of the Technology Mechanism.

IV. Gender and Sustainable Urban Mobility

15. The demand for urban mobility is ever increasing (see Box 2), as the urban population grows larger and the number of daily trips taken by each city dweller increases for various purposes: to get to work, meet with people they care about, and find access to health care, education, shopping, and culture. As such, mobility is a critical aspect of social and economic inclusion and an important determinant of human well-being, especially for women, girls and disadvantaged groups.

16. More than 95% of countries have included transport-related action in their NDCs (Changing-Transport n.d.) and the majority of cities across the world have taken steps towards achieving the SDG11, including by adopting the 'Avoid-Shift-Improve' framework in their mobility planning. For example, the concepts of circular economy and shared economy are increasingly adopted in the mobility sector, often enabled by digitalization, to decrease the number of new vehicles produced and to utilize unused vehicles or space with car-, bike-, and e-scooter sharing.

17. But the way in which such measures impact the life of city dwellers, and are experienced by them, varies depending on factors such as gender, age, race, ethnicity, religion, disability, and socioeconomic status. Moreover, the interplay of these factors and mobility is highly contextual and differs across cultures and geographies.

18. For example, an urban rail system may benefit long-distant travelers more than those who need to make shorter trips within their neighborhood (mostly women with domestic and caregiving responsibilities). Expanding cycling lanes may not necessarily benefit those city dwellers (commonly consisting of women and vulnerable groups) that are not able to afford, own or use bicycles due to economic constraints and social norms.

Box 2
Trends in urban mobility
Worldwide, daily trips via public transport account for approximately 16% of urban movement, while walking and cycling provide about 37%, and private motorized transportation still leads with about a global average 47% – about three times the share of public transport. By 2030, the target date for the SDGs, it is estimated that the number of daily public transport trips could increase by 50%, reflecting both the projected growth in urban population and an increase in the number of public transport trips made daily by many urban residents. (Source: UITP 2019)

19. To achieve sustainable urban transport means considering different needs and circumstances of city dwellers and providing them with equitable levels of mobility, while responding to the parallel challenges of climate change and sustainable development. The integration of gender considerations in all stages of analysis, decision-making, planning, design, implementation and monitoring of transport systems and their interaction with other aspects of urban life is a challenging yet crucial task for urban mobility policy makers and planners.

20. If gender considerations are not systematically mainstreamed in the urban mobility sector, the following SDGs will simply not be achieved (Priya Uteng 2021): Gender equality (SDG 5), Good health and well-being (SDG 3), Quality education (SDG 4) Reduced inequalities (SDG 10), Sustainable cities and communities (SDG 11), Climate action (SDG 13), and Partnerships for the goals (SDG 17).

21. Similarly, for climate mitigation and adaptation actions in the mobility sector to be effective and sustainable, they have to be gender-responsive. Studies examining the interplay of gender, climate change and mobility indicate that women and disadvantaged groups experience higher vulnerabilities to the impact of climate change, and are more likely to be overlooked and disproportionately affected by measures in place for decarbonization and green economic transitions,

proving that gender-responsiveness and climate justice are intertwined, and one cannot be achieved without the other.

22. Some of the mechanisms through which technology and infrastructure combined with systemic changes may impact GHG emissions from the transport sector in cities include (Jaramillo, et al., 2022): changes in urban form to create denser, more compact polycentric cities with mixed land use patterns; investments in transit and active transport technologies and infrastructure; promotion of teleworking and a move towards a digital economy; and utilization of smart mobility and smart city technologies that enhance transport data systems, and streamlining of mobility options and services.

23. However, without gender considerations, there is a risk that the economic and societal benefits from these measures bypass women, and the long-standing inequalities, for example in the labor market, remain intact or worsened.

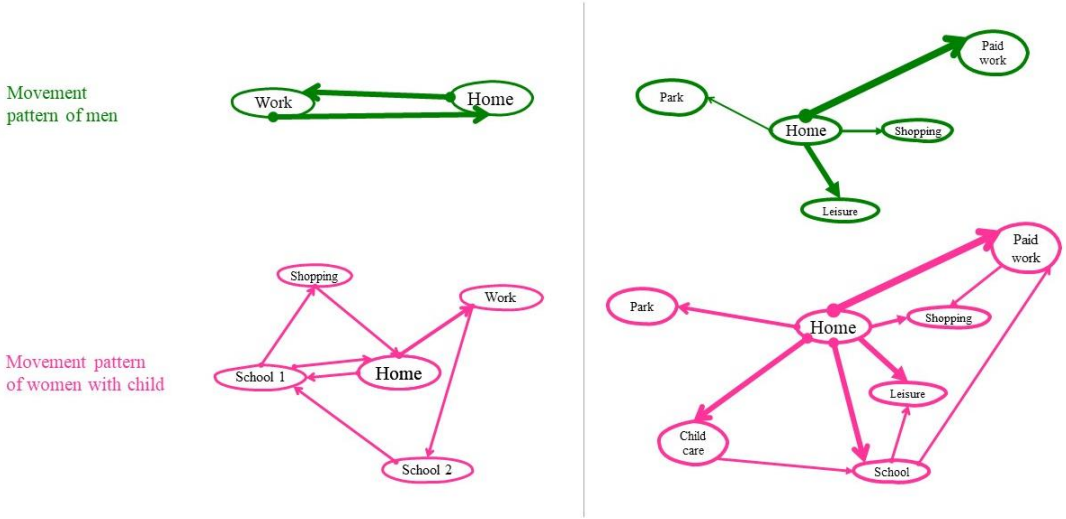
V. Gender-based differences and disparities in interacting with urban mobility systems

24. Gender differences in travel behavior are well recognized in the transportation and gender research and policy circles (CIVITAS WIKI consortium 2014). This section explores gender-based differences and disparities in urban mobility with a focus on women's needs, but the challenges and policy options that follow may be applicable to all genders, particularly from vulnerable and disadvantaged groups. It should also be noted that the interplay of gender and transport is highly contextual as women's need and gender roles differ across cultures and geographies.

25. Worldwide, there are around 15 countries that offer women-only bus services (World Bank, 2020). In fact, studies have shown that women in many countries prefer segregation in transport and urban mobility services to avoid harassment and stigma, despite this leading to more congested and constrained transit options for them (Aloul et al. 2019). Additionally, observation of mobility patterns across various geographies indicates that women are more likely to make shorter, more frequent, and more complex trips using a combination of public and private modes of transport linked to domestic and care-giving responsibilities. This is commonly referred to as "trip chaining" (Figure 1). Women and girls are found to walk more, travel less by car, and use public transport more than men (Cubells et al. 2020). Despite the growing percentage of wage-earning women globally, the majority of their travel remains non-work-related. As such, women are more likely to need and use micro-mobility options when travelling in cities, compared to working men who are more likely to make longer, single-purpose trips to and from work.

Figure

Summary of general travel patterns of men and women observed in 2017 in a slum in Buenos Aires (Allen 2018) (left) and in 2021 in the European Union (Diehl & Cerny 2021) (right)



26. Compounded with differences in demographic and socio-economic factors for women and men (see Box 3), including with regard to the participation in the labor market and ownership of essential assets (e.g. vehicles like cars and bicycles), these gender-based differences could result in unequal and inequitable outcomes in the interaction of men and women with urban mobility systems, and impact their mobility choices and behaviors. In what follows, some of such disparities are outlines, with few indicative examples.

Box 3
Examples of economic and social inequalities experienced by women

- Women are often over-represented in non-standard employment arrangements (ILO INWORK 2017) (temporary employment, part-time and on-call work, multiparty employment arrangements, dependent and disguised self-employment), with consequently lower income;
- Women make up the majority of the rapidly growing population living in urban poverty. The double bind of income and time poverty (due to undertaking the majority of domestic and care-giving responsibilities) is particularly pronounced for women of reproductive age, when they are often caring for young children (UN Women 2019; Women4Climate 2019);
- Women constitute the majority of public transport users globally and are disproportionately affected by safety concern in public transit, in both developed and developing countries;
- Women across low and middle-income countries are reported to use mobile internet less than men (327 million fewer women) (UNU et al. 2019);
- Women accounted for only 17% of venture-backed technology start-up founders in Silicon Valley in 2018 (Women4Climate 2019), with under 1% represented by women of color.
- Women are often more at risk of being injured or killed than their male counterparts in the event of a road accidents. This is due, in part, to the male-centric design of vehicles, which makes them unsafe for women, as well as for children, the elderly, and the disabled persons (World Bank, 2022).

1. Gender disparity regarding the availability of mobility systems and services

27. Cities across the globe are investing in sustainable private transport and public transit technologies and infrastructure to cope with their mobility challenges and enhance the coverage and connectivity of urban transport systems. However, merely expanding the infrastructure and services, does not necessarily increase their availability to all groups. Most public transit technologies and infrastructure are designed for linear travel toward the city center (and from the center outward) during peak hours, to optimize work commute. The majority of women's trips, however, are non-work-related, so they tend to use public transit outside of rush hours, during which less mobility services are available. This may discourage women from using sustainable transit technologies in favor of private, motorized modes of transport. It could also cause reduced access to social and economic opportunities for women.

28. A critical gender gap is observed with regard to cycling and the use of bike-sharing technologies, particularly in developing countries. Many women and girls may not be able to own or use bikes, and as a result, may not have learned to ride them safely and effectively. When cycling infrastructure -such as bicycle lanes and parking facilities- are not protected from the traffic and/or primarily designed around commute routes, women are less likely than men to use bicycles for urban mobility.

29. Shared sustainable mobility technologies such as car-sharing, which aim at reducing car ownership and related emissions, are also predominantly used by men. Since women do more trip-chaining, sparse and far-in-between pick-up and drop-off point for shared cars make the use of this mobility technology less feasible for women and other vulnerable groups. Moreover, inadequate amenities such as children seats or barrier-free car park makes the use of car-sharing technology unavailable to women travelling with children or persons with disabilities.

2. Gender disparity regarding the accessibility to mobility systems and services

30. The design of transport infrastructure and technology plays an important role in how accessible urban mobility services are to women. Many urban rail and bus transit stations require climbing several flights of stairs for access. For women accompanying children, elderly, or persons with disability, often while carrying heavy loads, pushing strollers or wheelchairs, this poses a significant challenge, particularly when there are no elevators. Other accessibility challenges, such as steep curbsides and steps, or narrow doors make boarding and alighting transit systems more difficult for women than for men. This is particularly true for women travelling with young children

during peak times when public transit systems are crowded. Women traveling with children may be subject to other passengers' intolerance when using public transit, in the absence of stroller-friendly spaces. Additionally, in some countries, there are social norms that prohibit the independent and unacompanied movement of women in public spaces and suburban premises. This not only limits women's income-generation opportunities but it also restricts development and social mobility by curbing their access to health, education, and other services—both for themselves and for children or other relatives they care for.

31. Studies show that elderly women tend to travel far less than men their age and prefer private modes over public modes of transport. **An Indian study** showed that elderly women used the private car for the majority of their trips, but since none or few of them owned a driver's license, they were dependent on male family members to drive them. And while the women did know about ride-sharing technologies and owned smartphones, they lacked the technological skill to access the application on their phones and make use of these services (Allen 2018).

32. A study done in **Argentinian slums** showed that women faced constraints in using public transit due to hard-to-understand information and maps of the transit routes and low confidence in their own orientation abilities. Although almost all of them had access to smartphones, they almost never used them for orientation purposes, and instead avoided travelling outside of their immediate living environments (Allen 2018). Digital literacy is key to bolstering the use of smart mobility options (e.g. web- and app-based technologies that promote access to mobility as a service) by a wider group of city dwellers, in particular women and vulnerable groups.

33. In **Mexico City,** a recent study (World Bank, 2018) showed that there is a growing number of women drivers relying on ride-hailing apps to meet their basic income needs and provide for their families. However, the study also emphasized that women tend to drive more selectively than men and are less likely to drive at night due to security concerns; which as a result significantly reduces their driving at times of peak demand and limits their earnings or ability to earn volume-based incentives. The study also found that there are cultural barriers that limit the recruitment of women drivers as an average of 57 percent of male drivers surveyed say they would be unhappy if a woman in their family wanted to sign up. Still, the women surveyed are just as likely as their male peers to turn a robust profit from driving, despite being less likely to own their own vehicle outright. From a demand standpoint, women riders are attracted to ride hailing for the convenience and security that the data trail provides: 52 percent of women riders that completed the surveyed indicated that they were attracted to ride hailing apss as these allow the rider to know the driver's name and registration in advance.

3. Gender disparity regarding the affordability of mobility systems and services

34. Making up the majority of the urban poor, women tend to use less expensive means of mobility than men and face more challenges related to the affordability of urban transport technologies. While poverty creates mobility constraints, a lack of transport options results in restricted access to work opportunities, reinforcing the 'time' and economic poverty of women.

35. Moreover, as women often conduct trip-chaining to reach multiple, often scattered destinations, the need to make multiple stops, using different urban transport systems can make transport fees more expensive, disproportionately subjecting them to 'transport poverty'.

36. Studies show that differences in travel patterns between women and men closely corresponded to those found between poorer and wealthier urban areas. Women tended to travel more by foot, while men were more likely to use motorized modes of transport.

37. Women are also more likely to pass up on job opportunities, when urban transport services are perceived to be too expensive and unsuitable to cater to their need for multi-purpose trip-chains. In studies conducted in major cities in China and Jakarta, Indonesia, women stated that they were able to take up work only because existing transit technologies reduced their travel times.

4. Gender disparity regarding the safety of mobility systems and services

38. The perception of urban transport safety significantly impacts the decisions and travel patterns of women. On average, women are ten per cent more likely than men to feel unsafe on metro trains (trains that go underground) and six per cent more likely than men to feel unsafe on

buses (Ouali et al. 2020). The gender-based differences are often compounded by other intersectional factors (such as age, race, disability, and socioeconomic status) in shaping the experience of women in interacting with urban mobility systems. Consideration of intersectionality is particularly important in understanding the nuances in women's perception of safety and their consequent mobility choices. While a young and educated, professional woman may have more urban transport options available to her than a man with a lower income, she is far more likely to face sexual harassment on public transit systems. An elderly woman on the other hand, may be less vulnerable to sexual harassment, but more likely to face physical barriers to accessing public transit systems, such as steep steps or a lack in technical skill to use transit-related mobile apps.

39. A study interviewing women in **Karachi, Pakistan,** showed that more than 70 per cent of the respondents had experienced sexual harassment while using public transport systems. Of those who had experienced sexual harassment, 31 per cent of students, 23 per cent of working women, and 20 per cent of homemakers started using public transport less, opting for more expensive modes, such as privately hired taxis and rickshaws. Moreover, 40 per cent of the respondents reported avoiding traveling after dark, which restricted their access to further education, flexible work opportunities and other social activities (ADB 2013). A study in **Chennai, India,** found that two-thirds of women respondents had been sexually harassed while commuting (groping, stalking, accosting), with the worst experiences on buses and trains that had no separate section for women (ADB 2013). Similarly, research on **São Paulo's, Brazil** metro system found that sexual violence is concentrated at the busiest central stations, during rush hours, and at stations that also attract other forms of violence and public disorder (Ceccato & Paz, 2017).

40. The findings of a survey undertaken in **Auckland, New Zealand** (participated by 448 female public transport users) showed concerning level of anxiety women experience during transfer waiting times. Women with ethnic backgrounds feel less safe during the day compared to Caucasian women. They were found to be more frequent users of mobile apps to determine the duration of waiting time compared to Caucasian women (Chowdhury & van Wee, 2020).

Box 4
Good practices: preventing gender-based violence in public transport

"Using technology and training to prevent Violence Against Women and Girls on buses in Mexico City"
In Mexico City's public transport system, 65% of women experience violence in transit vehicles and public spaces in the transport system such as Metro and bus stations. In this context, the World Bank Group, working with the local Ministries of Transport and of Women, private bus companies, local NGOs, gender equality and transport system experts, application developers, a mobile telephone company and transport local authorities, have developed a project to encourage community participation to address sexual harassment against women in Mexico City's urban public transport. The aim of the project is to trigger non-confrontational bystander interventions interrupting the sexual harassment using a mobile phone application.
The mobile application was designed for use by passengers to report sexual harassment and other abuses in a reliable and accessible manner, with the aim of allowing the compilation of data for further diagnostics and policy attention. This application will allow survivors to submit a report of any harassment or assault and for bystanders to report someone else being victimized. The communication campaign will be set inside the buses to promote a collaborative environment for the prevention and response to sexual harassment against women and girls. (Source: World Bank Group 2015)

"Shifting social norms driving sexual and gender-based violence on public transport in Sri Lanka"
In Sri Lanka, the 'Not on my Bus' campaign was co-created with support from the Oxfam and local partners, with the aim to reduce sexual harassment in public transport through promoting bystander intervention (Oxfam, 2019). It sought to promote positive norms that bystanders should intervene and that it is everyone's responsibility to uphold everyone's rights to violence-free public spaces. The multilingual campaign (in English, Tamil and Sinhala) mainly targeted bystanders, especially bus drivers and conductors, young people (including school children) and rush-hour commuters. The strategic activities of the campaign included social media campaigns (Instagram, Facebook and Twitter) to communicate the importance of bystander intervention, and dialogues with government institutions that aimed to challenge the negative norms and promote positive norms that encourage bystander intervention.

41. While gender-based violence and sexual harassment against women in public transport systems are well known, the vast majority of gender-based violence and sexual harassment cases go unreported. Women face a number of challenges, such as not being believed by authorities or a lack of confidence that the perpetrator will be caught. Moreover, most women are time-constrained,

making a trip to the police station to spend hours making a report unappealing. Particularly because in some cases, police officers may also be a potential source of harassment. Nevertheless, there are countries that have already started working to reduce these constrains in the reporting of gender-based violence in public transport. For instance, **in Quito, Ecuador**, as part of the UN Women Safe Cities programme, the city of Quito installed "Tell me Kiosks" in public transport stations for women to find help and report violence to trained staff. Drivers have also been trained on how to help women who have experienced violence or harassment, including how and where to report incidents (CAF, 2019). Similarly, the online safety map "Free to Be" identified transport hubs, trains and bus stations as prime locations for harassment. In five cities (**Delhi, Kampala, Lima, Madrid and Sydney**), young women and girls can use geolocating to drop a "good" pin on locations where they feel safe and a "bad" pin where they feel unsafe (IFC,2020).

VI. Challenges to gender-responsive urban mobility

42. While there is a growing understanding and agreement among mobility manufacturers, operators, innovators, policy makers and regulators about the significance of gender-responsiveness in transport policies and measures, cities across the world are faced with multi-faceted and context-specific challenges in adopting and executing such policies and actions. This chapter provides a non-exhaustive list of common challenges to be addressed to pave the way for gender-responsive sustainable urban mobility systems. These include challenges regarding:

(a) **Strategic approach and underlying value systems**. Systemic biases may put women and vulnerable groups in disadvantage, for example approaches to mobility that: favor mobility patterns of men based on traditional division of labor (thereby overlook different mobility patterns of women, the evolution of household and parental models, and more recent developments in the labor market); and take a “one-size-fits-all-women” approach in developing transport solutions (thereby disregarding intersectional factors in the experience of women in urban mobility systems);

(b) **Mobility data and planning models.** Disaggregated sex and demographic data on the mobility patterns and preferences of city dwellers is insufficient, and urban transport planning may result in gender-blind policies and actions, without knowing who is using the urban mobility system at what times and places, and with which purpose(s);

(c) **Capacity, knowledge, and technical skills of the mobility policy makers, workforce and users.** There are no systematic procedures for integrating gender considerations in the transport sector (UNECE n.d.), neither in terms of training of professionals, participation of users nor the design and planning of systems, services, and equipment;

(d) **Labor and employment systems.** There is a lack of gender-diverse representation in the workforce and leadership of the transport sector in both developing and developed countries (ITF 2021). Additionally, labors laws and labor rights are far from being gender-responsive in terms of achieving equal pay, ensuring discrimination-, violence- and harassment-free work environment, and providing inclusive maternity, paternity and parental leave;

(e) **Planning and budgeting frameworks.** Lack of guidance, data, coordination, and understanding of the importance of allocating resources to accelerate gender equality across all aspects of urban planning and budgeting remains a key challenge for achieving sustainable development goals in cities, including in the transport sector;

(f) **Stakeholder engagement and governance**. Many cities and municipalities lack platforms that enables the participation of NGOs, CSOs, grass-root organizations and local communities in decision making processes, thereby excluding the voices of women and vulnerable groups in the mobility planning;

(g) **Education systems.** There are critical gender disparities in education systems at all primary, secondary and tertiary levels across the world, with a worse performance in the developing world. Moreover, gender issues and stereotypes including with regard to parental roles and employment choice are not systematically addressed or challenged in the existing systems;

(h) **Financing mechanisms and systems.** In the absence of regulatory frameworks, fiscal measures and societal change that ensure and empower the integration of gender considerations into financing mechanisms and investments in the mobility sector, the profit-maximizing, business-as-

usual approach would lead to unfavorable outcomes for both climate and gender equality goals, e.g. more investments in privatized, motorized transport increases the emissions from the sector, with inequal benefits to women and vulnerable groups.

43. These challenges may not only be interlinked with each other, but also intertwined with other socio-economic factors of the urban population, which makes some groups, in particular women and vulnerable groups, more susceptible to be excluded and disadvantaged in interaction with urban mobility systems. In the following chapter (section B), a number of policy options and good practices are provided that may help planners, policy makers, businesses and regulators address some of these challenges, as appropriate to their needs and contexts.

VII. Options and good practices for gender-responsive urban mobility

44. As gender becomes an increasingly prominent issue within climate and mobility forums, policy makers find themselves under growing pressure to integrate gender consideration across planning, implementation and monitoring of transport systems. In what follows, a non-exhaustive list of policy and action options for bolstering sustainable urban mobility are provided, categorized by a) those that may impact the demand for and use-patterns of transport infrastructures by enhancing their gender-responsiveness, and b) those that foster enabling environments for gender-responsiveness in the provision of mobility systems and services, taking into account the systemic challenges identified in Chapter V.

45. Box 5 provides an example of CTCN technical assistance for conducting a feasibility study for low emission land transport sector in Vanuatu, that incorporated socio-economic dimensions including gender considerations in the process, including in relation to the engagement with stakeholders and development of a gender assessment and action plan.

Box 5
Good practice: "Feasibility study for low emission land transport sector in Vanuatu"
This feasibility study which was conducted as part of the technical assistance of CTCN in Vanuatu (a small island developing state) aimed to advance the following SDGs: Gender Equality (SDG 5), Affordable and Clean Energy (SDG 7), Decent Work and Economic Growth (SDG 8), Industry, Innovation, and Infrastructure (SDG 9), Sustainable Cities and Communities (SDG 11), and Climate Action (SDG 13).
In the study of the context, the CTCN identified that the economic role of local women is intertwined with their transport use. Almost all sellers in the market were women, and transporting their products was crucial for sale.
Accordingly, the CTCN conducted a series of workshops to address the findings with emphasis on improving the access of women to social services and economic opportunities, which should be enhanced through EV policies. As a result, the government is expected to take a cross-cutting approach for integrating policies with consideration of renewable energy, e-bus introduction, and gender sensitivity. (Source: CTCN 2019).

A. Impacting the demand for and use-patterns of transport infrastructures by improving availability, accessibility, affordability, and safety of mobility systems and services for all genders, in particular women and other vulnerable groups

1. Availability

46. Infrastructure adaptation to new technologies, for example by promoting the uses of Intelligent Transportation Systems (ITS), providing in-vehicle internet services, and making safety-related improvements in public, private and shared vehicles;

47. Expanding the urban transit network, multi-modal integration of transport means, and connecting the public transport system to the local transport infrastructure (e.g. bike lanes, demand-responsive buses in sub-urban areas) and other formal and informal modes of transport (e.g. micro-mobility options such as e-scooters) to increase geographic coverage and connectivity of mobility systems to the last-mile;

48. Facilitating the use of on-demand mobility services (including ride-hailing, ride-sharing, bike-sharing, and car-sharing systems) by women through monetary incentives (e.g. discounts on off-peak usage) and improved infrastructure (e.g. integrating children seats in shared mobility vehicles).

2. Accessibility

49. Ensuring easy access to buses and trains by providing sufficiently wide doors and elevators (e.g. to move wheelchairs and strollers), avoiding steep steps or stairs, and providing suitable seating spaces to accommodate children, elderly, and persons with disability;

50. Facilitating easy access to information about the routes and schedules of public transit systems, for example by ensuring the information is visually displayed on transit systems and stations and the transit stops are announced audibly;

51. Improving and/or designing transport-related mobile applications in a way that is easy to access and understand by women of all ages, accompanied with demonstration efforts and capacity-building opportunities for vulnerable groups to improve their "digital literacy" and access to services.

3. Affordability

52. Improving the competitiveness of public transport means by utilizing ticketing systems with affordable and flexible fares to accommodate women's travel patterns and needs, for example family tickets, work tickets, lower off-peak fares, and charging passengers per time instead of per journey and per person;

53. Utilizing multi-modal transit passes that alleviate high accumulative transit fares associated with trip-chaining;

54. Adoption of circular- and shared-mobility models in cities may reduce the cost of mobility for women while reducing the GHG emissions from across the value chain of the transport sector.

4. Safety

55. Increasing the safety of public transit stops and fleet, including through the provision of passive surveillance at transit stops (e.g. glass corridors), adequate lighting systems, designated "women-only" areas, installation of closed-circuit television technology, recruitment of trained security staff to prevent and handle cases of gender-based violence and equipping the system with emergency buttons for riders and communication devices for guard services (UNDP-ARUP-Uliverpool, 2022);

56. Using mobile technology to increase mobility safety, for example applications that provide safety related information for public transport stops (such as waiting times, level of crowdedness or emptiness, level of lighting and presence of security staff or closed-circuit television) or crowd-sourced navigation tools that enable residents to choose a path based on safety;

57. Improving the safety of micro-mobility and shared-mobility services by ensuring safe pick-up/drop-off points;

58. Involving men and boys in trainings and initiatives on code of conducts and other disciplinary actions for the prevention of gender-specific violence in public transport;

59. Establish safe and confidential complaints procedures for passengers to effectively report harassment and gender-based violence, using technology where appropriate;

60. Install mobile enabled emergency buttons for passengers and drivers to use when feeling at risk during travel journeys.

B. Addressing challenges to gender-responsive mobility by fostering enhanced representation and participation of all genders, particularly women and other vulnerable groups, in the planning and implementation of mobility systems

(a) Gender diversity and gender awareness in users and operators of mobility systems

Challenges addressed

#1 Strategic approach and underlying value systems
#3 Capacity, knowledge, and technical skills of the mobility policy makers, workforce and users
#4 Labor and employment systems
#7 Education systems

61. **Policy-makers at the national and local levels** should foster gender-responsiveness and gender balance in the transition of mobility workforce as a necessary component of a just transition in the sector, for example by providing technical and vocational education and training (TVET) opportunities for up-skilling and re-skilling female drivers and operators of public transit and ensuring their safety at work;

62. **Governments, educational and training institutions, private sector actors, and community-based organizations** could contribute to building and strengthening the awareness of and familiarity with green technologies and mobility options (e.g., bike-sharing systems and electric vehicles) for city dwellers, particularly women and vulnerable groups, for example through public training centers, online courses, in-community events, or public information campaigns in social and mass media;

63. **Public and private mobility providers** at the national and local levels should assess and revise humarn resources policies, materials and training to address any barriers to recruiting and retaining women transport workers;

64. **Educational institutions** could play a significant role in challenging gender stereotypes throughout the education cycle, e.g. through the socialization of both boys and girls in their formative years – making sure that positive attitudes towards gender are instilled in them thereby reducing gender imbalances in the labor market including transport sector. This could positively and actively contribute to reducing the cases of gender-based violence in mobility services and systems. Additionally, teachers and educators have to be adequately equipped in order to better impart gender awareness and responsive code of conduct to both boy and girl students, for example through: capacity buildings and trainings; updating teaching materials and teacher's manuals; utilizing tools for student engagements such as games, worksheets, and multi-media products; and encouraging reflective exercises through group discussions and activities in the classrooms (European Commission, 2021);

65. **Community-based organizations, businesses, and employers** could promote behavior changes and sensitization among city dwellers, particularly women, towards more sustainable mobility patterns (see Box 6), for example through initiatives, group challenges, and campaigns, sometimes accompanied by financial rewards. Such efforts must incorporate cross-cutting user profiles (accounting for age, education, disability, income, digital literacy among other things) to ensure greater reach to diverse groups of women (Joshi et al. 2022);

66. **International organizations and processes** (e.g. the ACE process under the UNFCCC) could contribute to enhancing awareness, capacity, knowledge and skills of individuals and organizations with regard to understanding, developing and implementing gender-responsive climate policies and actions in the mobility sector, including through global convening and promoting education, training and skill development opportunities to practitioners, policy makers, and workers in the mobility sector.

Box 6
Good practice: The city of Bogotá organizes cycling events and activities with the CSOs
In addition to utilizing over 80 km of bicycle lanes by improving the network and repairing bicycle roads in Bogotá, the city has organized notable events for women cyclists with its partners among CSOs. For example, the city addressed the "Manual of the Good Cyclist" introducing necessary measures for the improvement of infrastructures suitable for women, on an International Women's Day. Furthermore, the Secretary of Women of the city organized the "Take Back the Night" event, with a partner Safetipin, to highlight safety issues for women cyclists during night. This event was, especially, planned by considering the city-driven synthesized data on safety score and the number of women out at night. (Source: C40 2019).

(b) Gender diversity and understanding of gender issues among experts, designers and providers of mobility products and services

Challenges addressed

#1 Strategic approach and underlying value systems
#3 Capacity, knowledge, and technical skills of the mobility policy makers, workforce and users.
#4 Labor and employment systems
#7 Education systems

67. **Regulators and policy makers** could bolster the adoption of gender-transformative employment policies in the mobility sector and by individual companies that attract and increase the hiring of women and retain the talent of working parents, including flexible working arrangement, paid maternity/paternity leave, and equal pay policies (NG & Acker 2020);

68. **Governments and the private sector** could support innovation and incentivize research and development for gender-responsive mobility solutions, particularly among young female researchers and entrepreneurs, for example through the provision of gender-balanced scholarships, research grants, and business start-up grants;

69. **Governments and international organizations/initiatives** could incentivize the private sector and implementing entities to share insights, challenges, and lessons learned with regard to addressing gender issue in the mobility sector through knowledge products, flagship reports, technical assistance (see Box 7), multi-stakeholder forums, and knowledge platforms;

70. **Cities and local governments** could harness the power of technology incubators and accelerator to bolster the development and scaling up of innovative and gender-responsive mobility solutions (e.g., organizing technology pitches for young innovators and entrepreneurs, offering technical assistance and capacity-building opportunities), including through public-private partnerships and research and development subsidies;

71. **Academia and the private sector** could play a defining role in the provision of equitable opportunities for training, skill development and capacity-building for women in STEM fields to enter the green transport job market, for example through fellowships, mentoring programs, and mobility job fares. Additionally, by publishing research on work being done with men and boys in regard to gender equality, new masculinities and awareness for gender-based violence in public transport, academia could inform and strengthen the responsiveness of actions in favor of safe mobility services for all genders and vulnerable groups;

72. **Mobility-focused businesses** should ensure gender diversity and balance in the design and manufacturing teams working on mobility solutions (Ahmed et al. 2021) and provide ongoing trainings to minimize unconscious bias. This could encourage conscious and sub-conscious integration of women needs in the provision of mobility products and services.

Box 7
Good practice: Technical Assistance in Papua New Guinea for training all genders
Papua New Guinea is eager to improve the road infrastructure while enlarging the percentage of renewable energy share under the target of their NDC. As a technical solution, the country aims to adopt and foster electric vehicles, particularly for public transport in urban areas.
Gender-inclusive capacity building is included as one of the main strategies to accelerate the implementation of EVs policy. The country is planning to install "Gender-inclusive Skill Centers" pursuing the following objectives:
- Training all genders for EVs relevant job, e.g. offering courses for driving, mechanics, and charging stations through a partnership with private actors who can provide training equipment.
- Re-training ICE vehicle mechanics for adaptation to EVs.
As a result, it is expected that women's capacity for working with EVs will be strengthened and their participation will be increased in the transforming urban mobility sector (Source: CTCN 2022).

(c) Gender-diverse institutions and gender-responsive processes behind strategy and planning in the mobility sector

Challenges addressed

#1 Strategic approach and underlying value systems
#2 Mobility data and planning models
#3 Capacity, knowledge, and technical skills of the mobility policy makers, workforce and users
#4 Labor and employment systems
#5 Planning and budgeting frameworks
#6 Stakeholder engagement and governance
#8 Financing mechanisms and systems

73. **National and sub-national statistics offices** could bolster the integration of mobility-related gender-disaggregated information in the collection of qualitative and quantitative data at the national and city levels (i.e., through census and surveys), with a view to promote evidence-based and gender-responsive policy making, planning and budgeting in the mobility sector;

74. **National and local planning authorities** a gender-responsive sustainable urban mobility strategy at the national level accompanied by action plans at the municipal level, that are adapted to the local context, with defined targets, implementation period(s), roles and responsibilities of various actors, progress indicators and benchmarks, as well as checks and balances to ensure effectiveness of policies and actions;

75. **Cities and local governments** could engage in peer-exchange and experience sharing with other cities, for example through national, regional and international networks, to facilitate knowledge sharing and uptake of know-how information and practical measures for gender-responsive mobility;

76. **Academia, research institutions, NGOs, and private sector organizations** could play a key role in improving the availability and use of gender-disaggregated and intersectional mobility data (see Box 8), and could be incentivized by the national and local to take part in regular data collection and policy-relevant analysis, while ensuring ethical usage and privacy of data;

77. **Research and policy institutions, international organizations and development/implementing agencies** could contribute to the development of tools and methodologies that help creating the evidence base for the effectiveness of gender-responsive approaches, policies and actions in the mobility systems e.g., methods for assessing the climate and development co-benefits of gender mainstreaming in the transport system and assessing the impacts of gender-responsive policies and actions over time;

78. **Business associations and networks** could play a key role in promoting gender mainstreaming standards across industry sectors, as well as encouraging corporate disclosure of gender-related information by mobility providers, for example on the female to male ratio of employees and managers; whether the organizations and companies have any provisions/standards or guidelines in place for gender mainstreaming; or whether they have gender teams/focal points.

Box 8
Good practice: "Using Google Location History data to quantify fine-scale human mobility"
A study conducted in the United Kingdom collected data from Google Location History (GLH), validated against GPS tracker data to examine human travel patters varying from short, repeated movements to work or school, to rare migratory movements across national borders. Passively collected on smartphones, the collected data could provide insights about how people move throughout their daily activities within the context of disparities in income, gender, and other sociodemographic factors. The findings suggested that, for instance, wealthier urban groups tended to have better access to resources such as green spaces and high-quality foods, while this was not the case for nearby poorer populations, due to the ineffective accessibility of such resources to them. Combined with surveys, Google Location History data could help determine whether important travel patterns depend on gender and other socioeconomic factors and assist in addressing the needs of vulnerable groups. Using Google Location History data could provide urban planners with better context on not only which routes and infrastructure are most used, but which groups are using various resources. This could help promote gender-responsive and socially equitable access to mobility systems and could help inform urban mobility planning in the context of disparities in mobility of women and other vulnerable groups. (Source: Ruktanonchai et al. 2018).

(d) Gender-diverse representation and gender mainstreaming across regulatory frameworks and governance of sustainable urban mobility

Challenges addressed

#1 Strategic approach and underlying value systems
#4 Labor and employment systems
#5 Planning and budgeting frameworks
#6 Stakeholder engagement and governance
#8 Financing mechanisms and systems

79. **National and local governments** are key in for the institutionalization of participatory and gender-responsive planning and budgeting at the national and sub-national levels (see Box 9). Establishing gender-balanced citizen engagement panels and platforms (e.g. citizens' assemblies), as well as multi-stakeholder forums and planning committees (e.g. tasked with steering the development of gender-responsive mobility plans and processes) are possible means to ensure that women's voices are heard both as users and as professional transport planners. In turn, **non-governmental organizations, community-based organizations, grassroot organizations, and other civil society actors** should actively engage in such processes and utilize the platforms to ensure equitable outcomes;

80. **Public entities and regulators** should ensure gender-responsiveness in the public procurement processes for mobility-related services, goods and civil works;

81. **National and local governments** could utilize policy and fiscal instruments to promote divestments from high-emission transport means to no-regret options in public transportation, with a view to maintain and enhance the service level and quality available to all city dwellers (particularly women as they are more reliant on public transport than men), in the face of growing mobility demand in cities;

82. **Urban planning authorities** could promote behavioral change in the mobility sector towards more gender-responsiveness in the short-, medium- and long-term, for example by improving urban land use planning towards more mixed-used and denser urban areas;

83. **Establishment of gender auditing of mobility services providers in the public and private sectors** could help assess and check the institutionalization of gender equality into organizations/companies, including in their policies, programmes, human resources, projects and/or provision of services, structures, proceedings and budgets;

84. **International organizations, city networks, and think tanks** could improve the policy making processes and outcomes by develop guidelines and indicators for gender mainstreaming in sustainable urban transport and monitoring progress over time;

85. **Climate and development donors and funds** should integrate gender-responsive safeguards and measures in their programming, policy and projects (e.g. mobility-focused project proposals submitted to GEF, GCF and Adaptation Fund) to ensure transport and mobility related

actions supported by them contribute to gender responsive outcomes, are gender transformative in their approach; whilst also being compliant with the principle of "do no harm".

Box 9
Good practice: Gender-responsive budgeting in transport in Viet Nam
Viet Nam has established a legal basis for enabling gender-responsive budgeting through cumulative ratification, adoption, and enactment of regulatory frameworks facilitating the „Achievement of gender equality and empowerment of all women and girls (SDG 5)". In enabling a supportive legal environment, Viet Nam has taken a gender-responsive approach to budgeting. Consequently, following four programmes were implemented with the aim of more affordable transport for women:
The "Government of Viet Nam/United Nations Joint Green Production and Trade Programme" in 2013 enhanced the productivity of Thai ethnic minority women weavers by decreasing the cost of transporting their cloths for sale.
The road maintenance in the northern region of Lao Cai was carried out by local women who received capacity-building support and training to carefully consider the women's needs and difficulties, including through consultations with them, under a project "East Asia-Pacific Gender Capacity in Rural Transport" in 2016.
As part of the bidding process for the ADB-funded Ha Noi Metro Rail System, bus station contractors had to include social and gender considerations in their bids proposals and budget. The winning contractor employed a social and gender specialist to provide regular reports to the transport board. The rail project also developed a HIV/AIDS and anti-trafficking training for contractors and local communities (ADB, 2019) .
- Lastly, the "Ho Chi Minh City programme for a safe and friendly city free of sexual harassment and other forms of sexual violence against women, youth, and children in public spaces" (2017-2021) helped the city to allocate resources for implementing gender-related capacity-building programmes targeting senior positions as well as awareness raising activities for bus drivers and ticket collectors for the prevention of sexual violence. (Source: ADB & UN Women 2019)

VIII. Key findings and considerations

86. Key findings of this TEC brief are responding to the initial questions and specifically addressing various target groups, including policymakers, communities, academia, and the private sector.

A. Responding to the initial questions

(a) What are gender differences and disparities in in interacting with urban mobility systems, and how can sustainable mobility policies address these?

87. There were several gender differences and disparities recognized in this policy brief. These are differences between genders in trip purposes, movement patterns, licensing and car availability, trip distances and durations, and traditional transport modes and newly expanding transport modes such as shared cars, shared bikes, and other app-based rental and sharing services. The brief noted that expanding urban infrastructure and services does not necessarily increase their availability to all genders and vulnerable groups.

88. And appropriate policies must be developed in an inclusive fashion, involving gender groups in their development and implementation. In the brief, a few good practices were shown to confirm the effectiveness of a gender inclusive approach to ensuring benefits for the entire society.

(b) What are the challenges to gender-responsive urban mobility and how they can be addressed by policy makers, communities, and other stakeholders?

89. There were many challenges identified in this policy brief, including: challenges with regard to systemic bias that hinders gender equality in mobility systems; challenges in mobility data collection and planning models; challenges in the capacity, skills, and knowledge of policy makers; challenges in biased education environments and employment systems; and challenges in stakeholder engagement were mostly identified by examples and practices used in the brief.

90. Overcoming these challenges requires a systemic approach that integrates gender considerations across all stages of analysis, planning, design, implementation and monitoring of transport systems, and at all levels of governance. A strategic framework for gender-responsive sustainable urban mobility at the national level accompanied by localized action plans could provide

a holistic approach for addressing the interlocking of technological, behavioral, and physical (infrastructure) elements affecting the daily mobilities of various gender types, including women and other vulnerable groups.

91. For such a framework and action plans to be effective and impactful, they should be discussed and developed by a diverse range of national and municipal stakeholders (including policymakers and the general population), developed in close consultation with local knowledge holders and impacted communities, and implemented with careful consideration of the local context. The strategic framework for gender-responsive sustainable urban mobility could serve as a national integrated planning tool to include gender considerations in mobility-related policies, strategies, programs, and projects across cities and local communities. Such a framework may contain information on:

- Contextual information (challenges, enabling environments, social and cultural influences, economic factors);
- Roles and responsibilities (who does what?), modalities (how?), timelines (when?);
- Governance structure including checks and balances (decision-making processes, beneficiaries, target groups);
- Quantitative/qualitative targets at the national and/or municipal levels;
- Implementation period (e.g. 10 years) with review intervals (e.g. every 3 years).

(c) What are good practices of gender-responsive urban mobility that foster and enhance gender-responsive mobility systems in cities?

92. Several good practices of gender-responsive mobility were presented in the policy brief including with regard to improving:

- **Availability,** e.g. through expanding the urban transit network and connecting it to the local transport infrastructure and facilitating the use of on-demand mobility services including ride-hailing, ride-sharing, bike-sharing, and car-sharing systems.
- **Accessibility,** e.g. by facilitating easy access to buses and trains, providing suitable seating spaces to accommodate children, elderly, and disabled persons; facilitating easy access to information about the routes and schedules of public transit systems; and improving and/or designing user-friendly transport-related mobile applications.
- **Affordability,** e.g. through improving the competitiveness of public transport means by utilizing ticketing systems with affordable and flexible fares; and utilizing multi-modal transit passes that alleviate high accumulative transit fares associated with trip-chaining.
- **Safety,** e.g. by increasing the safety of public transit stops and fleet, including through the provision of adequate lighting systems, installation of closed-circuit television technology, recruitment of trained security staff to prevent and handle cases of gender-based violence, equipping the system with emergency buttons for riders. Other measures include using mobile technology to increase mobility safety and improving the safety of micro-mobility and shared-mobility services by ensuring safe pick-up/drop-off points.

B. Addressing various target groups, including policymakers, communities, academia, and the private sector

(a) Considerations addressing policymakers

93. National level (governments): National governments can foster gender-responsive mobility through agenda-setting, strategy development, regulatory measures, mobilization of resources, and convening other stakeholders. Mobilizing finance for improving infrastructure and the enabling environments towards gender-responsive urban mobility is a critical task of national governments, whether through investments, divestments or accessing climate and development funds at the national and global levels. They are also key players in ensuring policy coherence in achieving climate and sustainable development goals in the mobility sector, including in relevant policy areas such as economy, labor, and education. Furthermore, national governments play a significant role in enabling participatory governance (e.g. through institutionalization of civil society engagement in policy arenas), and institutionalization of gender-responsive measures across the board, e.g. gender-disaggregated data collection; gender-responsive budgeting and planning; gender-

responsive fiscal policy and instruments; gender-responsive public procurement; and gender auditing of mobility providers.

94. Municipal level (mayors and city councils): At the municipal level, local governments play an important role in making urban mobility gender responsive, including through policy coherence at the local level (e.g. in the interplay of mobility and land use planning). Mayors (individually or collectively as members of a network/initiative) could sends an important political message by recognizing the need to address gender issues in urban agendas. Relevant city departments and administrative areas can take action to promote gender-responsive urban mobility on the ground, including by: improving availability, accessibility, affordability and safety of urban mobility systems through the lens of gender equality (see section A of this chapter); engaging stakeholders regularly and meaningfully (e.g. through gender-diverse, multi-stakeholder committees tasked with steering the development and implementation of gender-responsive mobility action plans in their localities); promoting behavioral change through awareness-raising campaigns and capacity-building, as well as fiscal and societal incentives; and improving availability and analysis of gender-disaggregated and intersectional mobility data.

(b) Considerations addressing communities

95. Communities are at the heart of urban mobility systems, and as such, their active engagement in relevant planning and implementation processes, including their participation in multi-stakeholder committees, is of paramount importance to ensure their needs and wants are heard and adequately addressed. Civil society organizations play a key role in raising awareness, capacity, and knowledge of local communities to enhance their use of climate-informed mobility technologies and shaping more sustainable travel behaviors for all city dwellers. At the same time, these organizations are able to articulate and amplify the mobility needs of local communities in policy processes and advocate for gender-responsive policies and actions.

(c) Considerations addressing academic and research entities

96. Research and development institutions, universities, thinktanks and other actors involved in the interface of research-policy and knowledge-action in the mobility sector can significantly contribute to achieving sustainable gender-responsive urban transport, for example by: providing early feedback on gender-related gaps and challenges in mobility systems; gathering and analyzing gender-disaggregated data; producing research and quantifying case studies on the impact of engaging men and boys as part of the transport- and mobility-related actions; and by recommending gender responsive policy. In addition, the academia and school systems play a key role in addressing and alleviating root causes of gender inequality (e.g. gender stereotypes in defining parental roles and shaping employment choices) in the mobility sector through education, including at the primary and secondary levels.

(d) Considerations addressing the private sector

97. In addition to taking an active role in mobility-related policy engagement at the local and national level (e.g. participation in multi-stakeholder committees for sustainable urban transport), private sector organizations have a key role in demonstrating good practices in the implementation and scaling up of technologies and infrastructure that have contributed to gender-responsive urban mobility. Private sector bodies, for example business associations, also play a key role in promoting the uptake of gender-transformative employment policies and setting industry norms with regard to the disclosure of gender-responsive measures across the mobility sectors and gender auditing of mobility providers. The private sector also has a significant role in bolstering innovation for gender-responsive products and services in the mobility sector, including through RD&D, and technology start-up and accelerators.

(e) Considerations addressing the international organizations, networks and initiatives

98. International organizations play an important role in promoting gender-responsive mobility systems in cities, including by: organizing gender-diverse and multi-stakeholder meetings, workshops, and brainstorming sessions to raise awareness and develop sustainable mobility solutions; developing tools, methodologies, standards and reports that help national and local governments and other stakeholders in gender mainstreaming in their area of work; promoting experience sharing and peer-exchanges among individuals, institutions and cities to broaden the

reach and uptake of good practices and lessons learned from implementing gender-responsive measures and practices in mobility systems.

Box 10

Good practices: examples of engaging men and boys as part of actions for sustainable and gender-responsive mobility

- In Mexico, as part of the Safe Cities and Safe Public Spaces for Women and Girls initiatives, UN Women worked with both the local government in Mexico City and the private sector to develop the #NoEsDeHombres (It's not manly) communications campaign, launched in 2017 in the Mexico City public transport system, which carries up to 5.5 million passengers per day. An evaluation of the campaign noted some positive impacts. For example, 39 per cent of men exposed to the campaign said they would now respond actively to instances of sexual harassment; 29 per cent said that they respected women more and would avoid engaging in sexual harassment; and 25 per cent considered that it was useful to instill gender equality values in sons and daughters.
- MenEngage -an international alliance of NGOs working together with men and boys to promote gender equality- has published an accountability training toolkit, as well as standards and guidelines to help men and boys respond to issues and collaborate meaningfully with women's rights organisations on issues such as gender-based violence in transport systems.
- CARE – one of the world's leading global poverty-fighting organizations – has created a learning series that engages men and boys with topics of gender, equity and masculinities. This series includes stories of engagement and reflections on men and boys engaging gender work in technology, transport and other development fields .
- In Canada, a project called Calling Men in as Allies for Gender Equality was launched in 2022, recognizing the role of men and boys as allies in preventing gender-based violence and achieving gender equality. Under this project, a new a new Gender-Based Analysis Plus (GBA Plus) certificate training and outreach program will be carried on from 2022-2025, which include a component for smart transport and technology.

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