HER4WEFE

GENDER PERSPECTIVES ON URBAN WATER, ENERGY, FOOD, AND ECOSYSTEMS

Cities Alliance
Cities Without Slums

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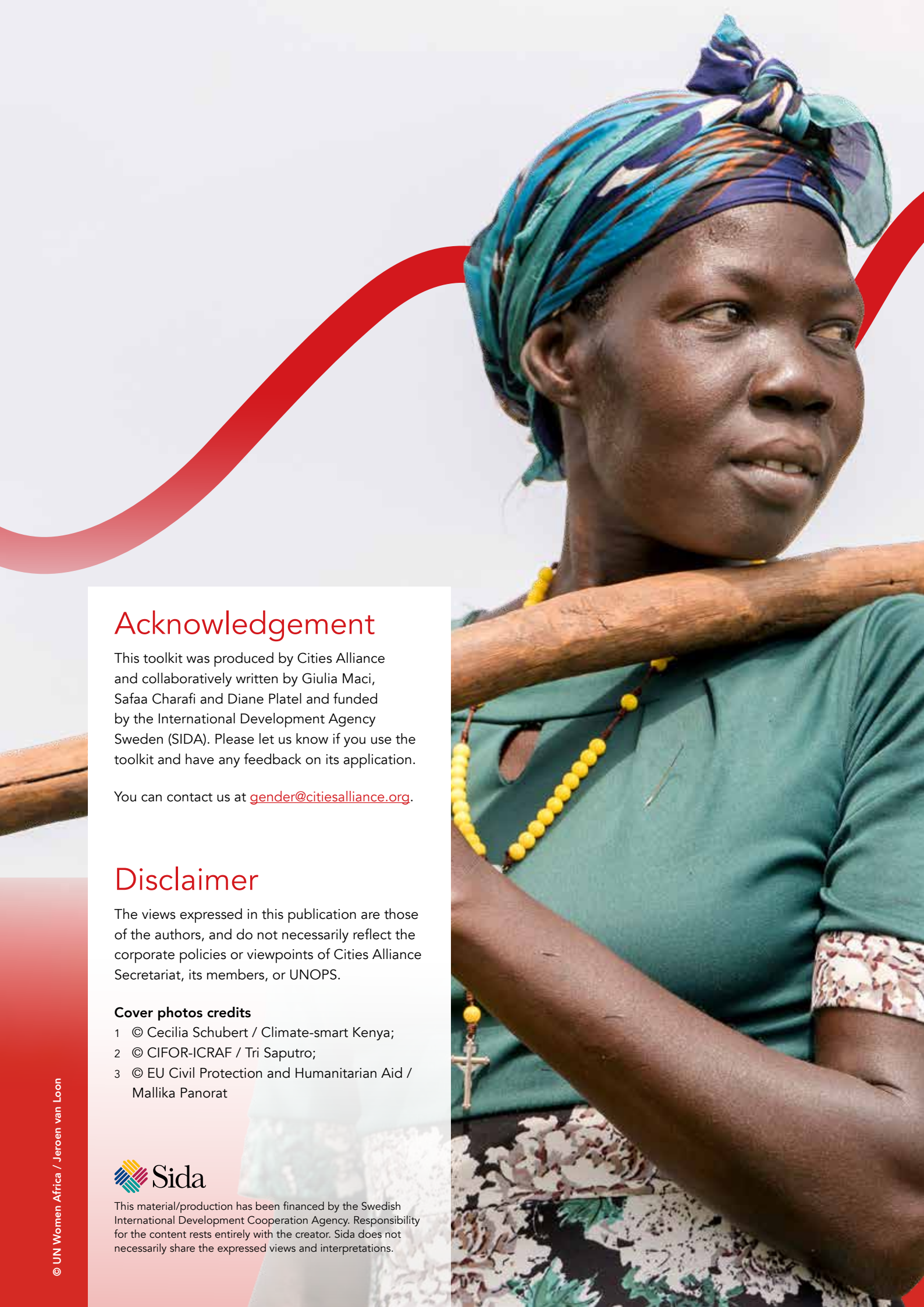

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Contents

Foreword

Climate change poses significant challenges to cities, with more frequent extreme weather events, heatwaves, rising sea levels, and increasing food and water insecurity. These challenges often exacerbate existing gender inequalities. Women, due to socio-economic factors and traditional roles in resource management, are disproportionately affected by these changes and remain underrepresented in decision-making processes.

In response, Cities Alliance has developed and tested over the years tools to assess and track women's engagement and vulnerabilities in the water, food, energy, and environmental sectors. These tools, grounded in participatory assessments, have been adapted to local contexts, helping communities better understand and address gender-specific challenges. Despite this progress, there remains a critical need for a more integrated approach that links different sectors to guide comprehensive urban planning.

A Water-Energy-Food-Ecosystems (WEFE) perspective offers a way forward by integrating gender considerations across all sectors. This approach calls for common and integrated strategies that acknowledge the cascading effects, externalities, and interconnections between water, energy, and food security. By doing so, cities can create more inclusive, sustainable, and resilient urban environments.

This toolkit aims to equip urban practitioners, local authorities, and civil society organisations with practical tools and methodologies for applying a gender-sensitive approach to the WEFE nexus in cities. It provides a comprehensive overview of the intersections between gender and the WEFE sectors, highlighting the importance of integrating gender perspectives into urban development policies.

By utilising the assessment tools included here—individually or in combination—local stakeholders can enhance their gender capacity, foster inclusive dialogue, and develop integrated solutions that are fair, effective, and sustainable. This approach not only ensures more equitable access to resources but also strengthens the resilience and adaptability of urban communities in the face of complex challenges.

We invite you to explore this toolkit to better understand and address the critical links between gender and the WEFE sectors, and to join us in creating cities that are inclusive, resilient, and sustainable for all.

Giulia Maci,
Head of the Euro-Mediterranean Programme and Gender Expert,
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01 The Water-Energy-Food-Ecosystems Nexus In Cities

The Water-Energy-Food Nexus, also known as the Water-Energy-Food-Ecosystems Nexus

to highlight its environmental aspect, has become a crucial framework for addressing complex resource and development challenges in cities over the past decade. The approach arises from the understanding that water, energy, agriculture, and natural ecosystems are deeply interconnected, a web of interactions and dependencies that must be considered comprehensively for sustainable development and resource management[1].

Traditional sectoral approaches that attempt to secure resources independently often threaten the sustainability and security of other sectors.

The WEFE Nexus underscores the interconnectedness between people, resources, and the environment across these sectors[2]. It recognises the interdependencies, trade-offs, and synergies in managing water, energy, and food resources to address stakeholders' diverse needs at various scales[3].

The water-energy nexus is a prominent connection, as energy production requires substantial water inputs while water infrastructure (such as pumping and treatment) is extremely energy-intensive[4]. Food production is also inextricably tied to both water and energy inputs for irrigation, transportation, processing, and more. Urban ecosystems such as parks, wetlands, and urban forests improve water quality, reduce energy demands through microclimate regulation, and support local food production[5].

The nexus perspective is particularly vital for urban areas that face intensifying resource demands. Cities rely on complex, interdependent systems to provide a variety of services: supplying water for residential, industrial, and commercial uses; providing energy for heating, cooling, transportation, and utilities; meeting food demands of urban populations; and maintaining functional ecosystems that provide services including air filtration, flood mitigation, and temperature regulation[6]. However, these systems are often governed and managed in isolated silos, leading to inefficiencies and missed opportunities for integrated solutions.

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1 FAO (Food and Agricultural Organization). 2017. Climate Smart Agriculture Sourcebook, 2nd edition. https://www.fao.org/climate-smart-agriculture-sourcebook/en.

2 Simpson, G.B., and G.P.W. Jewitt. 2019. "The Development of the Water-Energy-Food Nexus as a Framework for Achieving Resource Security: A Review," in Frontiers in Environmental Science, 7. https://www.frontiersin.org/journals/environmental-science/articles/10.3389/fenvs.2019.00008/full.

3 FAO. 2014. The Water-Energy-Food Nexus: A New Approach in Support of Food Security and Sustainable Agriculture. FAO: Rome. https://www.fao.org/3/a-bl496e.pdf.

4 UNESCWA (United Nations Economic and Social Commission for Western Asia). 2017. Developing the Capacity of ESCWA Member Countries to Address the Water and Energy Nexus for Achieving Sustainable Development Goals. United Nations. https://doi.org/10.18356/b1986169-en.

5 Dansie, A., et al., 2024 The Water, Energy, and Food Security Nexus in Asia andthe Pacific: The Pacific.

6 Artioli, F., et al., 2017 "The Water-Energy-Food Nexus: An Integration Agenda and Implications for Urban Governance."

By breaking down silos and fostering cross-sectoral collaboration, cities can create more resilient and sustainable urban environments. This integrated approach not only improves resource efficiency, but also enhances the overall quality of life for urban residents.

With an integrated WEFE perspective, cities will be able to develop strategies that increase resource efficiency and productivity, mitigate conflicts, build resilience, and support sustainable growth in the face of challenges such as rapid urbanisation, climate change, and ecosystem degradation[7].

The following table presents a conceptual matrix for the WEFE nexus, illustrating the interactions and overlaps among its components and providing concrete examples of integrated actions in cities. This matrix serves as a practical guide for implementation and demonstrates the tangible impact of adopting a holistic approach.

SECTOR	WATER	ENERGY	FOOD	ECOSYSTEMS
Water		• Energy for water supply and treatment	• Irrigation efficiency	• Maintaining aquatic ecosystems
Energy	• Hydropower		• Energy for food production, processing, storage • Reducing the ecological footprint of energy systems	• Renewable energy projects and energy-efficient systems, reducing the high dependence on fossil fuels, responsible for pollution and greenhouse gas emissions harming ecosystems
Food	• Water-efficient agricultural practices	• Energy efficient food systems		• Sustainable land use and agroforestry • Urban farming initiatives and sustainable agriculture practices
Ecosystems	• Protection of water sources • Implementation of rainwater harvesting systems • Wastewater treatment and reuse	• Ecosystem services supporting energy systems • District cooling and heating systems to improve energy efficiency • Utilisation of urban organic waste for biogas production	• Biodiversity supporting resilient food systems • Vertical farming and hydroponics to optimise space and water usage • Community supported agriculture • Green infrastructure and natural habitats protection	

7 Biggs, R., M. Schlüter, and M.L. Schoon, eds. 2015. Principles for Building Resilience. Cambridge University Press. https://doi.org/10.1017/cbo9781316014240.

02 Cities Alliance takes on the WEFE Nexus

For more than two decades, Cities Alliance has been a key player in global partnerships focusing on inclusive and participatory urban development strategies. With expertise spanning critical areas such as slum upgrading, urban planning, gender equality, migration, and environmental sustainability, Cities Alliance is uniquely positioned to advance the WEFE Nexus through a gender-sensitive approach.

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Nature-Based Solutions for Slum Upgrading in Salvador, Brazil

In 2008, Cities Alliance incorporated key sustainability principles into its slum upgrading projects in the Alagados district of Salvador, Brazil.[8] The local fishery industry, vital for income and food, relies on coastal ecosystems and water management. With Cities Alliance's support, the project helped local communities boost income, reduce waste, and implement sustainable energy solutions, all while protecting the environment. A core focus was regenerating the mangrove swamp, which protects the coastal ecosystem, supports sustainable fisheries, and ensures coastal water management through nature-based solutions instead of resource-intensive methods.

Waste Management in Monrovia, Liberia

From 2020–2021, Cities Alliance implemented projects focusing on the WEFE Nexus[9] in Liberia. Through infrastructure upgrades, slum improvements, capacity building for climate change actors, and municipal waste management regulation, the projects structured Monrovia's waste value chain from households to landfills. This improved local ecosystem preservation by preventing waste and hazardous materials from contaminating water bodies. Additionally, Cities Alliance enhanced water access and reduced food waste by deploying 64 solar-powered water kiosks in 34 communities and using solar energy for refrigeration in fisheries, thus preventing income loss in the local food production chain.

8 Cities Alliance. 2008. Alagados: *The Story of Integrated Slum Upgrading in Salvador (Bahia), Brazil*. Cities Alliance: Washington, DC. https://documents1.worldbank.org/curated/en/982251468247212151/pdf/470270ENGLISH010080alagados1english.pdf.

9 Cities Alliance. 2022. *Seizing the Opportunity: Rapid Urbanisation and the Circular Economy at the Intersection of Climate Change and Poverty*. Cities Alliance: Brussels. https://www.citiesalliance.org/resources/publications/cities-alliance-knowledge/seizing-opportunity-rapid-urbanisation-and.

Community and Heritage-Based Water-Food Nexus Project in Figuig, Morocco

The Oasis of Figuig in Morocco uses a sophisticated water system based on Foggara techniques, enabling groundwater extraction for palm groves around seven ancient Ksours (fortified villages in Northern Africa). Despite the installation of water pumps in the 1960s, the community-based water management system remains active, overseen by a respected member known as the Sarayfi, who manages water rights and irrigation schedules for farmers.

Although canal deterioration and climate change have affected rainfall patterns, the system persists, sustaining the community's livelihood through palm groves and date production. Since 2022, the municipality has promoted participatory experiments to transition towards sustainable and resilient water management, integrating culture, common spaces, heritage, and the inclusion of women and youth. In 2023, Cities Alliance selected the municipality of Figuig to participate in a key project studying women's inclusion in water management.[10]

A key aspect of Cities Alliance's approach is its commitment to gender-responsive procurement and direct project implementation, ensuring initiatives cater to the diverse needs and priorities of marginalised groups. Cities Alliance also facilitates grant-making to civil society organisations and international NGOs, empowering them to collect data, engage local communities, and implement targeted actions aligned with WEFE Nexus goals.

To promote networking and knowledge sharing, Cities Alliance serves as a multi-stakeholder knowledge exchange platform that brings together development agencies, governments, local authorities, and civil society actors. This collaborative space helps share innovative ideas, spark critical dialogues on public policies, and identify inclusive approaches for advancing the WEFE Nexus while placing gender equality as a core tenet. Leveraging extensive partnerships and close collaboration with the United Cities and Local Governments (UCLG) network supports inclusive WEFE initiatives in urban contexts worldwide. Through this strategic engagement, Cities Alliance bridges the gap between international thematic networks and networks of local authorities, facilitating the exchange of best practices, commitments, and mutual support among key stakeholders.

Due to the need for collaboration across traditional thematic silos, managing the WEFE Nexus involves a consultative process in which key stakeholders contribute and agree on responses to the challenges faced (European Commission, 2019).[11]

Consultation serves as a key method for bringing stakeholders together and can achieve the following:

- **Gather** participants from various sectors, government levels, countries, and spheres of influence.
- **Connect** directly with ongoing and emerging initiatives.
- **Develop** a shared understanding of issues, objectives, and potential scenarios.
- **Create** a shared vision that evolves into specific collaborative activities aimed at reaching concrete agreements on multi-sectoral and multi-scale strategies, leading to tangible interventions and solutions aligned with the SDGs.

Cities Alliance prioritises gender-sensitive approaches within the WEFE Nexus to ensure policies and initiatives address the needs of all community members, especially those who have historically faced marginalisation. This collaborative, inclusive approach supports Cities Alliance's mission to create sustainable and equitable urban development on a global scale. With a consistent effort to engage multiple stakeholders and promote inclusive practices, Cities Alliance contributes to strengthening the resilience and sustainability of urban environments worldwide.

10 Cities Alliance. 2023. *Expanding Inclusive, Gender-Sensitive Water Governance in MENA*. Femmes et Villes Durables project. https://www.citiesalliance.org/sites/default/files/2024-01/brochure_english_femmesetvillesdurables.pdf.

11 European Commission Joint Research Centre. 2019. Position Paper on Water, Energy, Food and Ecosystems (WEFE) Nexus and Sustainable Development Goals (SDGs). Biedler, M., C. Carmona-Moreno, and C. Dondeynaz, eds. Publications Office. https://doi.org/10.2760/5295.

03 Gender perspectives in urban development in relation to the water, energy, food and climate sectors

Women are particularly vulnerable to climate change impacts due to their socio-economic status, roles in families and communities,

and limited access to resources and decision-making processes. Despite this, there is a significant lack of evidence on how climate change specifically affects women, which leads to gender perspectives being ignored or unaccounted for in urban planning as well as climate change adaptation and mitigation strategies.

This oversight hinders the development of comprehensive and inclusive policies that address the unique needs and contributions of women, ultimately compromising the effectiveness of climate resilience efforts and sustainable urban development.

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Persistent gender inequalities and social exclusion often impede

equitable access and decision-making power over vital resources. In many societies, patriarchal norms and power structures grant men greater authority, influence, and rights over resource management, while marginalising women's roles and knowledge.[12] Even though women bear substantial responsibilities for securing food, water, fuel, and other essentials for their households, their contributions and priorities are frequently overlooked in development and environmental initiatives.[13]

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Gender-based barriers, rooted in societal norms and practical constraints, make it challenging for women to access and participate in decision-making spaces related to sectors often perceived as highly technical and male-dominated. Furthermore, women and men are heterogeneous groups; their experiences and needs vary greatly based on intersecting factors such as socioeconomic status, age, ethnicity, and geographic location.

Marginalised groups of men, including ethnic minorities, lower castes, and landless individuals often face exclusion and struggle to have their voices heard in community and governance processes that determine their access to resources and opportunities. Addressing these inequalities across key sectors such as environment, food, water, or energy through policy and practice leads to more equitable access to decision making, services, and benefits. This approach ultimately contributes to poverty reduction, improved health, and environmental sustainability for diverse stakeholders.

In many contexts, women are primarily responsible for securing water for household consumption, agriculture, and livestock. They often travel long distances and spend considerable time fetching water, which limits their participation in economic activities, education, and community engagement.[14] Women also frequently lack decision-making power over water resource management and infrastructure development, despite being primary users and managers of water in many communities.[15]

This exclusion from decision-making processes means that their specific needs and knowledge are habitually overlooked in the planning and implementation of water-related projects. For example, infrastructure projects may fail to account for the accessibility and safety requirements crucial for women, such as proximity to households and secure, well-lit pathways. Additionally, without women's input, critical issues, such as the burden of water collection, that disproportionately fall on women and girls may not be adequately addressed, perpetuating gender inequalities and reducing the effectiveness of water management solutions.

12 Doss, C., R. Meinzen-Dick, A. Quisumbing, and S. Theis. 2015. "Gender Inequalities in Ownership and Control of Land in Africa: Myth and Reality." *Agricultural Economics*, 46(3), pp. 403–434. https://www.researchgate.net/publication/274460317_Gender_inequalities_in_ownership_and_control_of_land_in_Africa_Myth_and_reality.

13 Dansie, A., H. K. Alleway, and B. Böer, eds. 2024. *The Water, Energy, and Food Security Nexus in Asia and the Pacific: The Pacific.* UNESCO and Springer Nature Switzerland AG: Paris, France and Cham, Switzerland. https://unesdoc.unesco.org/ark:/48223/pf0000389476.

14 UN Women, 2024. Facts and Figures: Economic Empowerment. https://www.unwomen.org/en/what-we-do/economic-empowerment/facts-and-figures.

15 UNESCWA (United Nations Economic and Social Commission for Western Asia). 2017. Developing the Capacity of ESCWA Member Countries to Address the Water and Energy Nexus for Achieving Sustainable Development Goals. United Nations. https://doi.org/10.18356/b1986169-en.

The energy sector also exhibits gender disparities.

Women, especially in rural and peri-urban areas, rely heavily on traditional biomass fuels, which exposes them to indoor air pollution and health risks.[16] Women and girls are primarily responsible for collecting firewood and other biomass fuels – a task that consumes significant time and limits their economic and educational opportunities.[17]

In the agricultural sector, indispensable to urban food security, women face inequalities in land ownership, access to credit, extension services, and decision-making power over food production and distribution.[18] These gender-based constraints undermine food security, nutrition, and resilience, particularly in rapidly growing urban areas dependent on strong food systems.

Overall, gender norms and power dynamics often exclude women from participating in decision-making processes related to natural resource management, urban planning, and infrastructure development.

As a result, policies and interventions frequently fail to address women's specific needs and priorities. Promoting gender equality and empowering women allows cities to use their human resources fully, improve resource efficiency, and build more equitable and sustainable communities.

Gender roles, responsibilities, and power dynamics significantly affect access, control, and decision making over essential resources within the nexus. As such, cities develop more inclusive and effective strategies for sustainable resource management by valuing the unique knowledge and contributions of women and socially excluded groups. Focusing on Gender Equality and Social Inclusion (GESI) in the sectors related to water, energy, climate, and food ensures the needs and priorities of all stakeholders are addressed, especially those historically marginalised. This approach enhances the effectiveness of policies and interventions, all while promoting fairness and leading to more resilient, adaptive urban environments. Furthermore, integrating a gender perspective into the Water-Energy-Food-Ecosystems (WEFE) nexus is necessary to promote equitable and sustainable urban development and achieve the Sustainable Development Goals (SDGs), as emphasised by the United Nations.

Many strategies fail to fully consider the interconnected effects of wider societal issues on women's economic empowerment. Although focusing on individual issues can advance gender equality to some extent, a more comprehensive approach is required to fundamentally change inequitable structures and achieve true economic empowerment for women.[19] It is essential to establish connections with other policy domains, such as migration, climate and environmental issues, gender-based violence, women's peace and security, infrastructure, and public transportation.

16 UNESCO, UN-Water, 2020. *United Nations World Water Development Report 2020: Water and Climate Change*. UNESCO: Paris. https://www.unwater.org/publications/un-world-water-development-report-2020.

17 Artioli, F., M. Acuto, and J. McArthur, 2017. "The Water-Energy-Food Nexus: An Integration Agenda and Implications for Urban Governance." *Political Geography*, 61, 215–223. https://doi.org/10.1016/j.polgeo.2017.08.009.

18 FAO, 2023. The Status of Women in Agrifood Systems. Rome

19 UN Women, 2024. *Women's Economic Empowerment Strategy*. UN Women: New York. https://www.unwomen.org/sites/default/files/2024-03/un-women-womens-economic-empowerment-strategy-en.pdf.

04 The importance of collecting data on the WEFE Nexus and gender implications

The lack of gender-focused data in the WEFE Nexus significantly impedes a holistic understanding of these complex interactions.

Comprehensive data collection and analysis are important to fully understand the interactions within the WEFE Nexus and to provide the evidence base for identifying key interdependencies, trade-offs, and opportunities for coordination. Without robust data, policymakers lack the insights necessary to develop integrated strategies that balance resource demands across sectors.

An integral component is collecting sex-disaggregated data to uncover potential gender inequalities related to WEFE Nexus resources. This data can reveal disparities in roles, responsibilities, decision-making power, and access to water, energy, food production, and ecosystem services. With gender-specific data, policies can be designed to address the unique constraints faced by women and promote gender equality goals.

In addition to gender considerations, data is needed on resource flows, consumption patterns, and the state of ecosystems across different scales from households to urban areas. It is vital to map intersections such as water used for energy generation, energy inputs to the water sector, and resource demands of agriculture.[20] Geographic information systems (GIS) can integrate spatial data to identify resource hotspots and exposure to climate risks.[21] Longitudinal data collection over time is also crucial for monitoring progress, evaluating policy effectiveness, and adaptively managing the WEFE Nexus as conditions evolve.[22] Continuous data provides accountability for achieving sustainable development targets.

For maximum impact, data collection should involve diverse stakeholders, including policymakers, researchers, civil society, indigenous groups, and local communities. These kinds of participatory methods capture vital traditional knowledge and context-specific realities that are often missed by top-down data gathering.

© UN / Albert Gonzalez Farran

20 UNESCO and UN Water, *United Nations World Water Development Report 2020: Water and Climate Change*.

21 Biggs, R., M. Schlüter, and M. L. Schoon, eds. 2015. Principles for Building Resilience. Cambridge University Press. https://doi.org/10.1017/cbo9781316014240.

22 Mohtar, R. H., and R. Lawford. 2016. "Present and Future of the Water-Energy-Food Nexus and the Role of the Community of Practice." *Journal of Environmental Studies and Sciences* (6:1), pp. 192–199). Springer Science and Business Media LLC. https://doi.org/10.1007/s13412-016-0378-5.

The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT) published a framework highlighting the need to take a "people-centric" view of the WEFE Nexus by using an intersectional lens in data collection.[23] This means looking beyond gender to also understanding differential impacts based on factors including age, ethnicity, and socioeconomic status. Regional initiatives such as WEFE4MED[24] are working to elevate gender dynamics within WEFE Nexus dialogues and data efforts, recognising it as a cross-cutting issue to address growing resource challenges in the Mediterranean.

In summary, implementing strong data collection methods that are gender sensitive, participatory, and capable of capturing the complexities of the WEFE Nexus is crucial to facilitating cohesive, evidence-driven policymaking for sustainable development. Without such thorough data, policies and interventions may prove ineffective, counterproductive, or even detrimental.

23 Jalonen, R., H. Zaremba, P. Petesch, M. Elias, N. Estrada-Carmona, S. Tsvuura, and S. Koirala. 2022. *Gender Equity and Social Inclusion in the Water-Energy-Food-Ecosystems (WEFE) Nexus: Frameworks and Tools for Moving from Resource-Centric to People-Centric WEFE Nexus Approaches.* Alliance of Bioversity International and International Center for Tropical Agriculture (CIAT), Rome, Italy. https://hdl.handle.net/10568/127383.

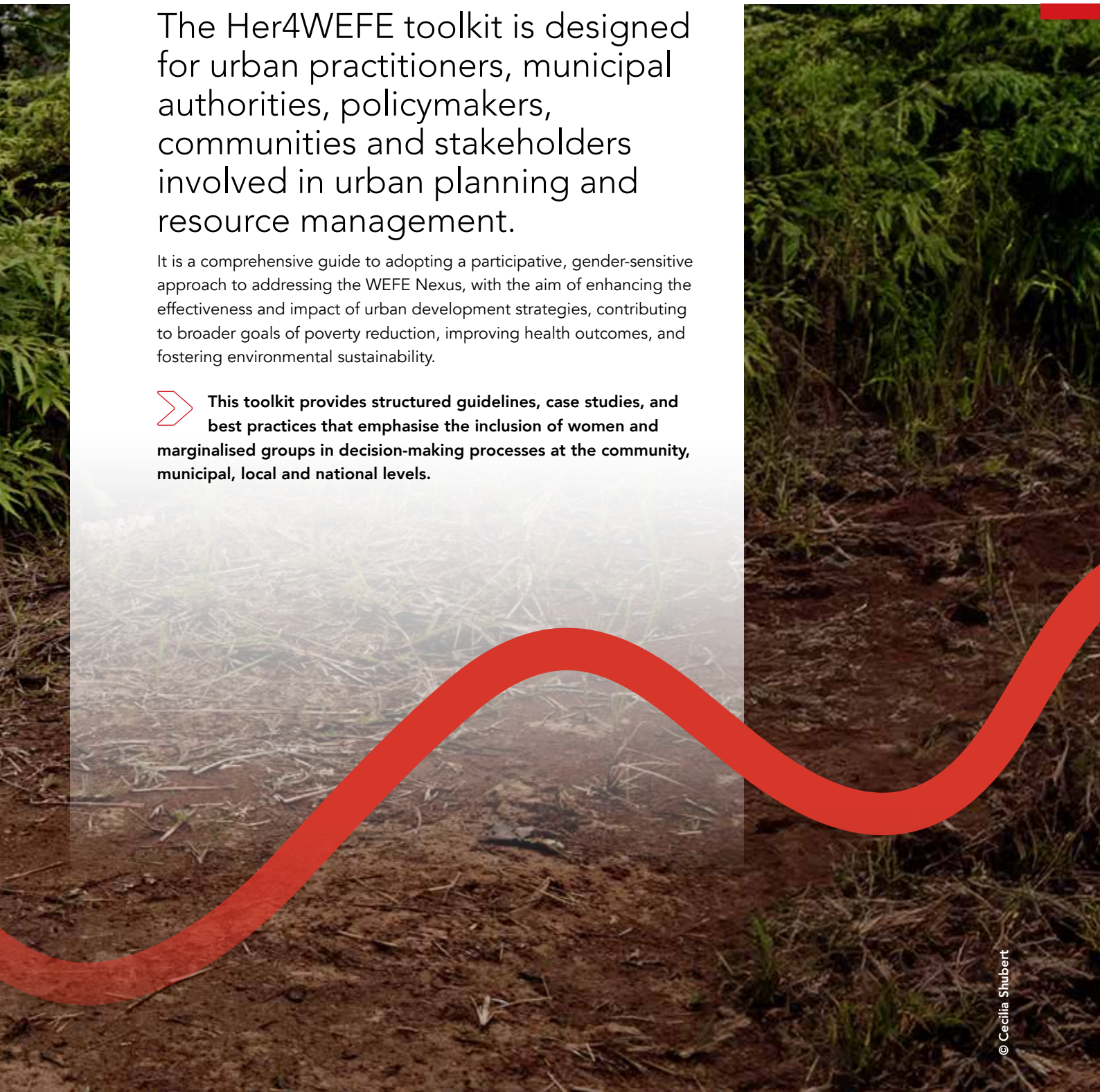
24 The Mediterranean Water-Energy-Food-Ecosystems Nexus Community of Practice https://wefe4med.eu/wefe/home.

05 How to use the Her4WEFE toolkit

The Her4WEFE toolkit is designed for urban practitioners, municipal authorities, policymakers, communities and stakeholders involved in urban planning and resource management.

It is a comprehensive guide to adopting a participative, gender-sensitive approach to addressing the WEFE Nexus, with the aim of enhancing the effectiveness and impact of urban development strategies, contributing to broader goals of poverty reduction, improving health outcomes, and fostering environmental sustainability.

This toolkit provides structured guidelines, case studies, and best practices that emphasise the inclusion of women and marginalised groups in decision-making processes at the community, municipal, local and national levels.



Step 1: **Identify System Interdependencies and Policies Gaps**

- **Map Interdependencies:** Use the tools to gather data on gender-related policies, gaps, and needs across water, energy, food, and climate sectors. Identify how these sectors are interconnected. For example, assess how a drought or flood affects food security, energy distribution, and specific gender impacts.
- **Gap Analysis:** Focus on where gender gaps exist in policy implementation, disaster preparedness, and responses in each sector, and understand the cascading effects on other sectors. Consider how climate change impacts, like floods or erratic rainfall, may particularly burden women, who often manage household water and food resources.
- **Assess Availability and Needs:** Analyse data to understand the city's reliance on external resources, the sustainability of current supply systems, and the long-term implications for women and marginalised groups. Identify where resource scarcity most significantly impacts these groups.

Step 2: **Review Local Stakeholders and Governance Structures**

- **Identify Key Stakeholders:** Through the tools, identify key stakeholders (e.g., city departments, local businesses, NGOs, women's groups) involved in resource governance. Understand their roles, influence, and current involvement in gender-responsive planning.
- **Analyse Policies and Processes:** Evaluate existing policies, infrastructures, institutions and governance processes that affect resource access and distribution. Identify gaps in gender representation and the participation of women and marginalised groups in decision-making.

Step 3: **Define Strengths, Weaknesses, and Priorities**

- **Assess Resilience:** Use the tools to assess strengths and weaknesses in the city's resilience to climate hazards and resource management from a gender perspective. Focus on how solutions in one sector might impact others, particularly concerning women's ability to cope with different challenges. For example, consider how building a dam for energy production might disrupt water ecosystems, affecting irrigation and water access.
- **Prioritise Actions:** Based on the findings, prioritise actions to address pressing gender inequalities. Identify gender-sensitive solutions (e.g., women-led water management, equitable energy access) for short-, medium-, and long-term implementation. Ensure that these solutions are compatible across sectors to avoid unintended negative impacts.

Step 4: **Develop an Integrated Gender-Responsive Action Plan**

- **Synthesise Data and Develop an Action Plan:** Use the toolkit to combine the insights and data collected across all sectors. Develop a comprehensive action plan that integrates gender perspectives into all WEFE-related strategies, taking into account the interconnections and trade-offs between sectors ensuring inclusive and equal access to resources and services.
- **Coordinate Across Sectors:** Facilitate cross-sectoral collaboration by sharing the action plan with all stakeholders identified. Promote joint planning and decision-making to enhance the effectiveness and inclusivity of coordinated urban resilience efforts.

Step 5: **Build Capacity and Encourage Ongoing Collaboration**

- **Conduct Training and Awareness Programs:** Leverage the toolkit's training materials to build capacity among local stakeholders, city officials, and community organisations on gender-sensitive WEFE approaches. Conduct workshops and awareness campaigns to promote understanding and support for the integrated plan.
- **Increase women's participation and representation in the decision-making processes**, engage with them and local communities for project design and monitoring, ensuring their active participation in decision-making processes.

Step 6: **Long-Term Implementation**

- **Conduct regular assessments** to track progress and address emerging challenges - especially when considering the different sectors together and with potential cross-over/competing effects/consequences. This can take the form of annual reviews or mid-term evaluations to monitor the implementation of gender-integrated WEFE management initiatives and identify areas for ongoing improvement, engage with women and local communities to seek their feedback from the implementation phase and throughout the strategies elaboration.
- **Promote knowledge sharing and learning** between cities and regions by establishing platforms for exchanging experiences and best practices, organising workshops, webinars and conferences where stakeholders can share their lessons learnt and innovative approaches to gender-inclusive WEFE management.
- **Communicate the data:** Develop clear and concise communication materials to convey assessment findings, such as infographics, summary reports and fact sheets presenting key findings and recommendations. Each communication strategy should be tailored to the different stakeholders, with the diffusion of podcasts or videos through digital channels to reach a wider audience, or targeted workshops to engage with the community directly. With this communication, emphasise the use of sex-disaggregated data and gender analysis in decision-making by presenting data highlighting gender-specific patterns and disparities. Incorporating gender analysis into policy discussion and decision-making process will allow widespread discussion and help rebuke practices and stereotypes hindering women's full participation in the WEFE sectors.

Putting the Her4WEFE toolkit into action requires adapting and strengthening key processes and procedures.

To use this toolkit effectively, practitioners should undertake its practical steps for collecting and analysing gender-disaggregated data, facilitating inclusive stakeholder consultations, and implementing gender-responsive policies and projects. The toolkit is structured to help users navigate the complex interconnections between water, energy, food, and ecosystems in urban settings, ensuring that all interventions consider the unique needs and contributions of women.

The Her4WEFE toolkit, in alignment with Cities Alliance's comprehensive strategic vision, maximises the potential of interdisciplinary approaches to gender equality and the empowerment of women and girls. It emphasises the importance of systemic outcomes that rely on interlinkages between the key impact areas of water, energy, food, and ecosystems. By focusing on this nexus, this toolkit highlights the critical intersections where gender equality and sustainable urban development meet. For instance, it addresses how women's roles in securing water, managing energy resources, and contributing to food systems are often overlooked, leading to ineffective and inequitable policies.

Incorporating the insights and methodologies provided here ensures that urban development initiatives do not just superficially include women, but actively empower them, leveraging their unique knowledge and experiences to drive more effective and inclusive solutions across the WEFE sectors.

06

Water • Energy • Food • **Ecosystems**

Her4CLIMATE: A women-centered tool for assessing responses to climate impacts in cities

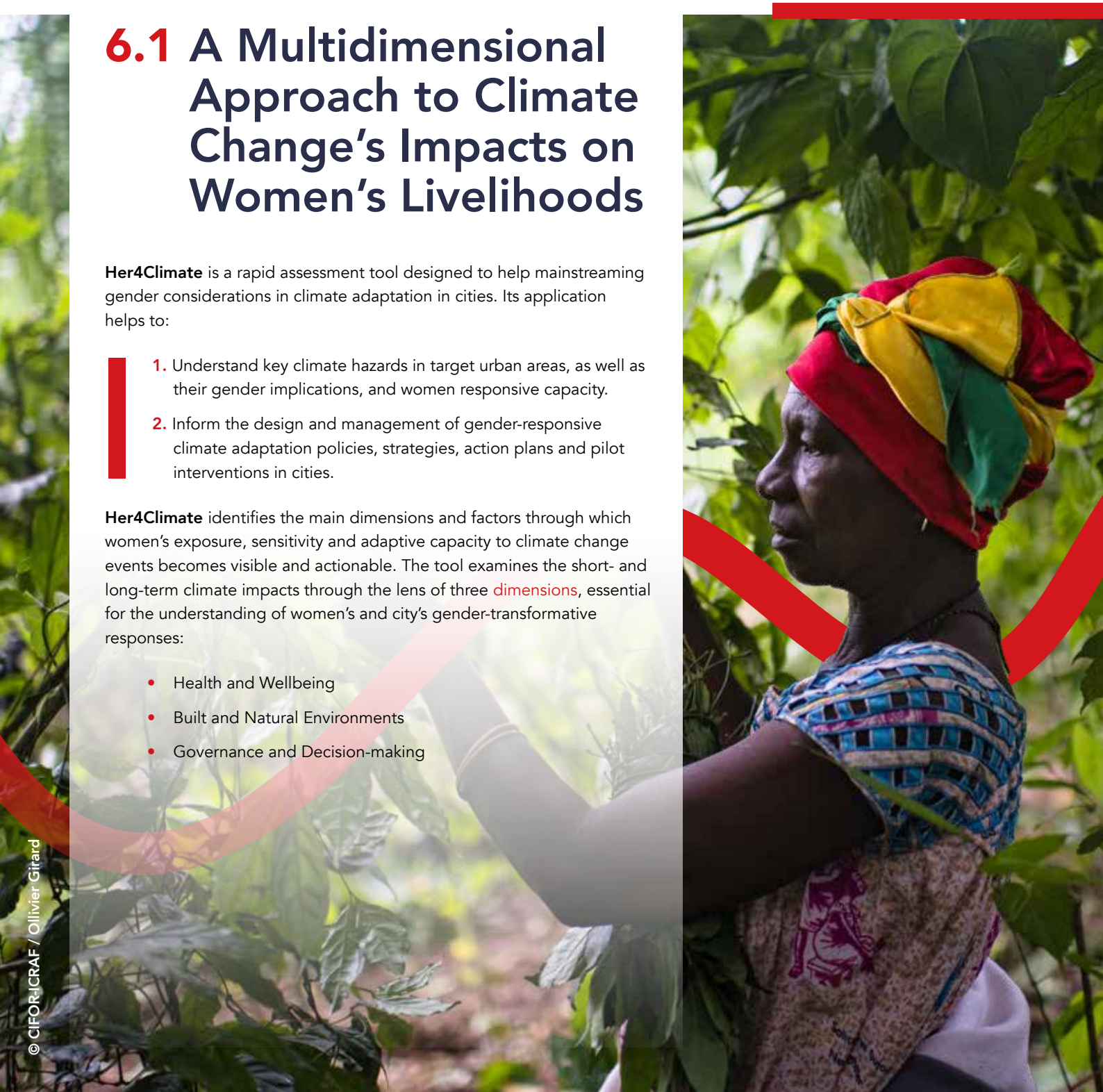
6.1 A Multidimensional Approach to Climate Change's Impacts on Women's Livelihoods

Her4Climate is a rapid assessment tool designed to help mainstreaming gender considerations in climate adaptation in cities. Its application helps to:

1. Understand key climate hazards in target urban areas, as well as their gender implications, and women responsive capacity.
2. Inform the design and management of gender-responsive climate adaptation policies, strategies, action plans and pilot interventions in cities.

Her4Climate identifies the main dimensions and factors through which women's exposure, sensitivity and adaptive capacity to climate change events becomes visible and actionable. The tool examines the short- and long-term climate impacts through the lens of three dimensions, essential for the understanding of women's and city's gender-transformative responses:

- Health and Wellbeing
- Built and Natural Environments
- Governance and Decision-making



The framework further identifies a series of factors within each dimension. These factors guide the assessment and enable users of the tool to understand how differences in gender roles, needs and opportunities affect the exposure, sensitivity and adaptive capacity of women to climate change in a given context or situation. The factors help users of the tool to address the gaps that exist in relation to gendered norms and power dynamics, therefore leading to gender-transformative climate action. For example, assessing these factors might reflect the gendered gaps in access to education, job opportunities, health services, or other areas, and the associated differences in climate impacts or responsive capacity.

The assessment, therefore, indicates where actions may be required to close these gaps, ensuring equal access to opportunities and benefits resulting from climate action. Strong support and gender-responsive spatial and policy interventions can help women to better adapt to climate impacts and to therefore improve the adaptive capacity of cities as well.

6.1.1 Dimensions

Built and natural environments

Climate change can impact women's health and wellbeing in multiple ways, such as an increase in water-borne diseases due to rising water levels, higher rates of malnutrition due to food shortages, increase in heat-related mortality and morbidity or an increase in respiratory diseases where air pollution worsens. For instance, heatwaves expose women to greater risks of heat stress.[25] Drought and water scarcity increase the time spent collecting water (a burden that falls overwhelmingly on women),[26] while decreasing time for education and employment.[27] Flooding and storms damage health and education facilities, disconnecting women from essential services.[28]

Health and wellbeing

Any discussion on the impacts of climate change on daily life must inevitably draw attention to the built and natural environment, referring not only to buildings, streets, infrastructure, land ownership and natural resources, but also to the people acting on them. The emphasis on the built environment arises from the argument that "natural disasters" are not as natural as they may first appear, as there are significant human-induced aspects to such events. Also, these factors have a high impact on women's vulnerability in relation to climate effects and events: women's roles are often connected to the household and land, and can be directly dependent on the natural and built environment conditions in which they are situated or relocated.

Governance and decision-making

Women's actions and insights are often side-lined in climate discussions and decision-making. For instance, women are underrepresented at UN COP events.[29] In 2020, just 15 per cent of environment ministries in 187 countries were led by women[30], and only 20 per cent of mayors around the world were women. Only a small proportion of climate finance includes gender equality as a main objective.[31] This is despite the fact that improving gender equality is shown to improve environmental governance and strengthen climate resilience.[32] At community level, women also generally have limited involvement in leadership and decision-making, and their participation in formal or informal consultations is limited. When women are not consulted, they can feel the effects in material ways: housing affects all household members, and when decisions are made by a single male member it may mean sub-standard shelter for all, with implications for vulnerability and adaptation to climate extremes.

25 Azhar, G. S., 2017. 'As Heat Rises, Women Risk Death in South Asia'. Thomson Reuters Foundation, 28th August.

26 In 80 per cent of households facing water shortages, girls and women are responsible for collecting water (UN Sustainable Development Goals, Goal 6: Ensure access to water and sanitation for all. Available: https://www.un.org/sustainabledevelopment/water-and-sanitation).

27 On a daily basis, girls and women spend 200 million hours collecting water (Wateraid, https://www.wateraid.org/uk/the-crisis/tackling-inequality/girls-and-women#:~:text=Today%2C%20over%20200%20million%20hours,who%20menstruate%20is%20at%20risk).

28 United Nations Population Fund (2021) 'How women and girls bear the brunt of climate disasters'. 19th August. Available: https://arabstates.unfpa.org/en/news/how-women-and-girls-bear-brunt-climate-disasters.

29 Smith, E., 2022. 'Gender Dimensions of Climate Insecurity'. SIPRI Insights on Peace and Security, No. 2022/4.

30 IUCN, 2021. 'New data reveals slow progress in achieving gender equality in environmental decision making'. 1st March.

31 Schalatek, K. & Stiftung, H., 2020. Gender and Climate Finance, Climate Finance Fundamentals 10. Available at: https://climatefundsupdate.org/wp-content/uploads/2021/03/CFF10-ENG-2020-Digital.pdf.

32 World Bank Group,2011. Gender & Climate Change: Three things you should know.

6.1.2 Factors

The following section describes factors listed within each of the three dimensions.

> Factors represent areas that directly contribute to women's and city's preparedness for, and responses to, climate change effects and related hazards.

Therefore, factors help in identifying zones where strong support and relevant interventions can help women to better adapt. When assessing women's adaptive capacity to climate impacts, users should refer to the following descriptions for understanding key challenges, as well identify possible solutions and related benefits.

Built and natural environments

Security of tenure

Women are disproportionately impacted by climate change and climate shocks when they have weak land tenure.[33] Inheritance laws, lack of land-rights, customary and cultural practices and insufficient financial resources are just some of the constraints that women face in relation to security of tenure. **Currently an estimated 1 billion women living in urban areas cannot access secure tenure**,[34] which increases their vulnerability to climate hazards. Land rights and secure tenure create a foundation for women to develop resilience to climate impacts, which in turn supports their families and communities. Secure land tenure in this way also supports food security, economic resilience, and women's ability to connect to governance systems and achieve political and economic recognition.

Women with secure tenure and home ownership enjoy a range of rights and freedoms over those who do not. They have greater economic opportunity, are more likely to engage with government authorities, and face fewer risks of exploitation and violence.[35] Following a climate event, secure tenure reduces the likelihood that women are permanently displaced – because they have a property to return to and the means to improve its resilience. Innovative strategies in land tenure systems that favour women's access to land (e.g., collective land titles) are critical for climate adaptation.

Housing

Housing forms the basis of a safe environment, belonging and identity, mental and physical health, and economic livelihoods and representation. Housing is also essential for climate resilience, with women living in poorly constructed and rudimentary housing having far greater sensitivity to climate hazards. Socioeconomic status has a large influence on the survival rate of a climate event, and housing is the key factor within this.[36] With less than 40 per cent of women participating in the labour force globally, and 21.7 per cent of women providing full-time care, women and children are most often the victims of housing-related fatalities since they have to spend more time at home.[37] Therefore, women living in formal, high-quality and stable housing are better

33 Center for International Forestry Research, 2021. 'Securing women's resource rights through gender transformative approaches'. Available at: https://www.cifor.org/wlr.

34 The Rockefeller Foundation, 2014.) 'In the Developing World, Property Rights for Women are about more than just housing'. Insights, Issue No. 1.

35 Chesterman, S. Bailey, A. Valencia, A, M, P., 2022. 'Securing land tenure for women and girls to promote climate change and resilience'. Available at: https://forestsnews.cifor.org/77083/securing-land-tenure-for-women-and-girls-to-promote-climate-change-resilience?fnl=en.

36 UNDRR, 2022. 'Women and the right to resilient housing'

37 Catalyst, 2021. Women in the Workforce: Global (Quick Take). Available online: https://www.catalyst.org/research/women-in-the-workforce-global.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prepared for climate shocks. More resilient housing can better withstand flooding and storm surges. And more spacious, ventilated housing reduces the impact of increased temperatures. When climate events destroy housing, it is most often replaced by more expensive housing developments, leading to long-term displacement and housing insecurity. Upgrading the resilience of existing housing pre-climate event can therefore mitigate this effect.

When women take the lead through collective action, they are more able to design locally relevant, gender-sensitive, and climate-resilient housing solutions. When women are provided with support, technology and design knowledge, they are better able to undertake vulnerability and risk assessments, and undertake effective upgrading of housing supply.[38] Empowering women to take the lead on improving housing can also lead to knock-on effects on greater participation in wider governance decisions and demand for improved services.

3

Mobility

Public transport is designed along inflexible trunk lines and schedules. Such system cannot meet the complex patterns of mobility of women who must combine their caring role with their income activities. For example, in most cases, women are responsible for accompanying their children (and other dependents) to different locations including day-care centres, school or leisure activities. A lack of mobility options leaves women with few options other than to walk or make cumbersome and dangerous journeys. **Climate change effects (for instance, flooding or increase in temperatures), have a significant impact on women's mobility challenges.** Despite this data, mobility plans often do not consider the needs of women and girls, and consequently neglect their views for safety, security and comfort. Beyond physical infrastructure, specific attention needs to be given to gender-based violence and harassment in public transport.

Gender-transformative transport strategies need to be developed for individual locations because of the multiple and varying cultural, social, economic and topographical factors that shape mobility infrastructure and habits.

> Women with access to reliable and high-quality mobility options enjoy a range of economic and social opportunities, and are less exposed to climate impacts, crime and violence.

Good mobility networks that withstand climate hazards can help women evacuate, for instance to avoid rising flood levels. Flexible and adaptable mobility networks, technologies and strategies have the power to support communities that choose in situ adaptations over migration, in case of gradual/long-term climate events.[39]

38 UNFCC, 2022. Women's Action Towards Climate Resilience for Urban Poor in South Asia. Available online: https://unfccc.int/climate-action/momentum-for-change/women-for-results/mahila-housing-trust.

39 Koubi, V., Schaffer, L., Spilker, G. et al., 2022. Climate events and the role of adaptive capacity for (im-)mobility. Popul Environ 43, 367–392 (2022). https://doi.org/10.1007/s11111-021-00395-5.

Infrastructure

For purposes of this tool, infrastructure is defined as a set of different networks that enable the flow of people and services. For example, **climate events can significantly impact the availability of energy for cooking and heating, which is predominantly seen as women's responsibility.** This leads to the transition to traditional fuels (such as wood, charcoal, agricultural waste), that may cause indoor air pollution and affect the health of women and children. Household air pollution was responsible for an estimated 3.2 million deaths per year in 2020, including over 237 000 deaths of children under the age of five.[40]

Infrastructure is important for women's access to services,

development and livelihood opportunities and for their resilience. Where women are surrounded by robust critical infrastructure that remains operational following a shock, they can go about their lives largely uninterrupted. Furthermore, when infrastructure is resilient to long-term effects of climate change, it is able to provide safe and secure access and control over resources to women.

Ecosystems

Nature plays a pivotal role in climate resilience, but women's access to nature (green and blue spaces) have been reduced overtime, especially in vulnerable contexts. Furthermore, due to their roles in using resources like wood, water, forest products, and subsistence agriculture, women have a unique understanding of the natural resources and hold a disproportionate share of responsibilities for resource procurement and environmental maintenance. Yet they have limited formal rights and political and economic means to determine the future of resource availability and environmental quality.[41]

Studies have shown that where women live near green space and nature-based defences like mangroves, the impacts of climate events are reduced. In turn, women's sensitivity to climate shocks decreases. Building on this, nature provides a diverse range of benefits that extend beyond climate resilience. It is important to take gender-differentiated approaches to management of natural resources, as this can make adaptation interventions more sustainable and cost-effective. Also, a growing number of studies demonstrates the importance of gender-transformative approach to nature-based solutions for climate adaptation.[42]

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Health and wellbeing

Food security

Women have a greater role than men in natural resource management and ensuring nutrition, particularly in vulnerable urban contexts: they grow, process, manage and market food and other natural resources, raise livestock, manage vegetable gardens and collect fuel and water.[43] Climate hazards decrease access, stability, and quality of food systems. For low-income households already experiencing food insecurity, the impacts are severe. Female-headed households often have a higher likelihood of food insecurity,[44] making them highly sensitive to an increased frequency of drought and flooding in particular.[45]

40 WHO. Household air pollution and health, 2022. Available at: https://www.who.int/en/news-room/fact-sheets/detail/household-air-pollution-and-health.

41 Pionetti, Carine, 2016. Filling buckets, fuelling change. UNDP Canada, pp. 58.

42 GIZ, 2021. Toward gender-responsive Ecosystem-based Adaptation: Why it's needed and how to get there. Authors: A Dazé (IISD) and A. Terton (IISD). Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Bonn, Germany.

43 Brody, Alyson, Justina Demetriades and Emily Esplen, 2008. Gender and Climate Change: A Scoping Study on Knowledge and Gaps. BRIDGE, Institute of Development Studies, UK.

44 Negesse, A. et al., 2020. The impact of being of the female gender for household head on the prevalence of food insecurity in Ethiopia: a systematic-review and meta-analysis. Public Health Reviews 41 (15).

45 Food and Agriculture Organization of the United Nations, 2015. Climate Change and Food Security: Risks and Responses. FAO.

To effectively adapt to climate change effects and related hazards, women should be entitled to easily access credit and agricultural extension services, receive incentives to engage in environmentally sustainable farming practices, and make long-term investments in land rehabilitation and soil quality. Their food-related knowledge should be integrated in decision-making and strategizing. Reinforcing women's solidarity networks is seen as critical to increasing their resilience and adaptive capacity to climate change effects.[46]

Water, sanitation, and hygiene (WASH)

Climate events affect the availability of water for domestic and productive tasks, and can disconnect women from good sanitation and hygiene facilities, exposing people to health risks. Women pay the heaviest price because they are responsible for managing water at the household level, particularly in vulnerable urban contexts.[47] For instance, in 80 per cent of households facing water shortages, women are responsible for collecting water.[48] Often, this involves cumbersome journeys with increased risks of exhaustion, harassment, violence and sexual assault. Time spent for water fetching influences the available time they could use for income generating activities, education, civic participation, etc.

> Degraded or non-existent sanitation increases sensitivity to a variety of diseases, and women face disproportionately high health risks compared to men.[49]

Women need to have access to resilient water and sanitation infrastructure, including diversified water supply (such as rainwater tanks and solar pumps) and drinking water points in proximity to the household. Sanitation capture and treatment options need to be approached systemically, on the community level. These assets need to be functional during climate events and appropriate for the biophysical and cultural contexts. Also, mechanisms must be put in place to manage and distribute water equitably and effectively, and reduce water-related conflicts during time of water stress (for example, women-led water governance groups). Women's perceptions and opinions need to be taken into account for WASH infrastructure design, evaluation and operation.

Education

Studies show that without urgent action, climate change will make it increasingly difficult to achieve a quality education for disadvantaged girls and young women. During climate related shocks, families are more likely to withdraw children from school.[50] Additionally, women with lower education are more likely to live in poverty, with fewer resources to sustain themselves and withstand climate shocks. Illiterate women are especially sensitive because they are less likely to communicate with decision-makers and understand climate-related information, for instance early warning alerts.

There is an urgent need to enable actions to help keep girls in school in times of stress, including practical measures to relieve burdens of household work and childcare responsibilities.[51] Education helps women to access the information about laws, policies, institutions and structures which govern their lives.

Through education, they gain confidence, self-esteem, and the skills to challenge and confront existing power structures and unsustainable livelihoods.

46 Forsythe, L., J. Morton, V. Nelson, J. Quan, A. Martin and M. Hartog, 2015. Achieving dryland women's empowerment: environmental resilience and social transformation imperatives, Natural Resources Institute, University of Greenwich, Chatham, UK.

47 Women, Gender Equality and Climate Change. UN WomenWatch Fact Sheet. Available here: https://www.un.org/womenwatch/feature/climate_change/downloads/Women_and_Climate_Change_Factsheet.pdf.

48 In 80% of households facing water shortages, girls and women are responsible for collecting water (UN Sustainable Development Goals, Goal 6: Ensure access to water and sanitation for all. Available: https://www.un.org/sustainabledevelopment/water-and-sanitation).

49 Dunne, D., 2020. 'Mapped: How climate change disproportionately affects women's health'. CarbonBrief, 29th October.

50 Porter, C., 2021. 'Our Future, Our Voice – Girls' Education and Tackling the Climate Crisis'. COP26, 9 November 2021.

51 Porter, C., 2021. 'Our Future, Our Voice – Girls' Education and Tackling the Climate Crisis'. COP26, 9 November 2021.

Work and care duties

Gender gap in earnings exists across all employment categories, including informal and self-employed sectors.[52] Nine in ten countries have laws impeding women's economic opportunities, such as those which ban women from factory jobs, working at night, or getting a job without permission from their husband.[53]

> Women concentrated in insecure, exploitative and precarious employment are less likely to earn a stable income, are more exposed to violence and harmful behaviours, and are more sensitive to climate shocks.

Furthermore, women in climate-dependent economies, for instance agriculture, are more sensitive to changing climate cycles. Climate events significantly increase the time women spend doing unpaid care work, limiting time available for economic activities.[54]

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By contrast, secure employment provides a stable income for women. When a climate hazard strikes, this increases the likelihood that women can afford services, shelter and sustenance. Having access to care facilities for people living with disabilities or health conditions, for maternity and childcare is a necessary requirement for strengthening women's adaptive capacity to climate impacts.

Adaptation initiatives must explore options that reduce women's care work responsibilities, including care for household, children, family, elderly, and for those who are living with disability or health conditions.

Disability/illness

Climate change disproportionately impacts women with disabilities, who suffer higher morbidity and mortality rates during climate events. Often, they have little emergency support, especially in dense informal settlements where mobility is restricted. Women living with disability face higher risks, including discrimination, a lack of access to evacuations and recovery, and limited say in decision making. Furthermore, women are most often the ones that provide care and support for people with disability and other health conditions, which is the main contributor to "time poverty" – the lack of time for education, income generation, or participation in decision-making processes. Compounding this, many national policies fail to include persons with disabilities.[55]

State parties to the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) are obliged to develop and implement evidence-based climate mitigation and adaptation policies to prevent and minimize the adverse impacts of climate change on persons with disabilities; and to provide accessible information on climate change to persons with disabilities, strengthen their capacity to participate in climate decision-making that concerns them, and ensure that they have access to effective remedies when they suffer harm from climate action and inaction.[56]

52 Brody, Alyson, Justina Demetriades and Emily Esplen (2008) Gender and Climate Change: A Scoping Study on Knowledge and Gaps. BRIDGE, Institute of Development Studies, UK, pp. 6.

53 UNDP (2016) Overview of linkages between gender and climate change. Global Gender and Climate Alliance.

54 Pionetti, Carine (2016). Filling buckets, fuelling change. UNDP Canada.

55 Status Report on Disability Inclusion in National Climate Commitments and Policies. June 2022, McGill Centre for Human Rights and Legal Pluralism. Available: https://www.internationaldisabilityalliance.org/sites/default/files/drcc_status_report_english_0.pdf.

56 Ibid.

Governance and decision-making

Climate hazards awareness and action plans

Where women lack access to reliable and up-to-date information on climate risks and events, they cannot adequately prepare. Existing analyses show that 43 per cent of global cities do not have adaptation plans to keep people safe from climate threats, even though awareness of climate risks has never been higher (93 per cent of the 812 disclosing cities report that they are at risk from climate change).[57]

> A key impact of the lack of adaptation strategies and plans is that the vulnerable groups, such as women, are left unprotected against climate change hazards.

By contrast, the frequency and severity of anticipated hazards must be communicated through formal and informal channels, recognising the different capacities of women (e.g., access to internet, disability, language spoken). With climate action plans and response strategies in place, women can prepare for the impacts of climate hazards and possibly reduce them to a large extent. Women are more likely to acknowledge ecological problems and risks, express higher levels of concern, adopt new habits and engage in activities that are beneficial to the environment because of the social roles they play.[58] Therefore, it is critical to involve them in decision-making, incorporate their day-to-day knowledge of the immediate environment and account for their ways of coping and managing economic, social and ecological stresses.

Community cohesiveness

Living in communities with weak or non-existent social ties can leave women isolated, increasing their sensitivity and eroding their adaptive capacity, during and following a climate event. Women usually play the role of resource management in relation to food, water and the natural environment, and when this knowledge is not shared within the community, adaptation to climate impact is significantly reduced.[59]

When social cohesion amongst women in a community is low, conflict and gender-based violence also increases, reducing capacity for innovation and response to climate solutions.[60]

By comparison, women living in communities with strong social ties have greater support systems to rely upon. Community groups can help channel funding and resources towards vulnerable groups, increasing the likelihood that women can access financial, health and social assistance to stave off the worst effects of a climate event. It is through community and collaboration that women gain access to support networks and positive role models. Community groups can pool resources and capacity, and form saving groups which can allow land to be purchased or housing to be upgraded to improve climate resilience. Strong community cohesiveness amongst women is also necessary in dismantling gender stereotypes and empowering women to contribute to decision-making processes within their communities.[61]

57 CDP (2021). Nearly half of cities lack plans to keep populations safe from climate threats, https://www.cdp.net/en/articles/media/nearly-half-of-cities-lack-plans-to-keep-populations-safe-from-climate-threats#1; accessed on 28 July 2022.

58 Goldsmith, R., I. Feygina, J.T. Jost (2013) 'The Gender Gap in Environmental Attitudes: A System Justification Perspective', in Alston, M. and K. Whittenbury (eds) Research, Action and Policy: Addressing the Gendered Impacts of Climate Change, Springer, Netherlands.

59 UN Chronicle, Osman-Elasha, B. (2022) Women… In the Shadow of Climate Change. Available online: https://www.un.org/en/chronicle/article/womenin-shadow-climate-change.

60 Women4ClimateAction (2019) Women leading climate action: A world within reach. Available online: https://www.womens-forum.com/wp-content/uploads/2020/06/Women4ClimateAction-report_2019.pdf.

61 UN Women (2022) Explainer: Why women need to be at the heart of climate action. Available online: https://www.unwomen.org/en/news-stories/explainer/2022/03/explainer-why-women-need-to-be-at-the-heart-of-climate-action.

3 Civic engagement and political leadership

In many regions, it is difficult for women to achieve positions of political leadership through traditional routes. Barriers to meaningful political participation can be structural (such as illiteracy, reduced mobility), institutional (such as representation in decision-making groups), or related to social and cultural norms (such as biases for acceptable roles for men and women).[62] Nonetheless, women throughout the world are developing leadership skills in non-governmental and community-based organisations.

> It is crucial to create an enabling political, legal, economic and cultural environment that allows women to engage in decision-making processes in an effective and sustainable way.

Where women participate in the definition of climate action plans and solutions, their distinct sensitivities can be minimised, and their adaptive capacity supported. Civic engagement mechanisms in place need to be diversified, in order to allow for different levels of participation and leadership, and to adjust to different availabilities of women (for example, women's formal presence in local authorities, gender quota, structured dialogue with women's groups, participatory processes).

4 Technology

Technology is not only important for timely responses during extreme climate events, but is also seen as a climate adaptation strategy (e.g. storage systems, solar stoves, mobile phones, water reservoirs). However, the limited understanding of gender roles often results in the design of new technologies that produce greater gender inequalities, or identifies women as being solely responsible for climate adaptation and thus producing an unequal and unrealistic burden for them.[63]

Women with access to the internet, mobile phones and/or radios can stay updated with early warnings and climate updates. Furthermore, they can find information on evacuation procedures, safe spots and government support following an event. **Technological innovation can contribute to gender-transformative practices, as well as to climate adaptation**. To achieve this, a deep understanding of gender roles, relative powers and responsibilities need to be part of every stage of the design, operation and maintenance process. Designers of climate adaptation technologies need to be trained for gender-transformative approaches, women's participation need to be actively included in the development and use of climate technologies, and pre-existing women-led climate adaptation responses need to be identified, supported and funded.

5 Financing for adaptation

Economic dependency and a lack of adequate financial resources are major constraining factors for women in climate adaptation strategies.
25 per cent of cities report budgetary constraints as a barrier to further action on climate change.

The effectiveness of climate finance mechanisms in building climate resilience depends on the capacity of national institutions to prioritise and coordinate effectively, and to monitor and ensure the distribution of costs and benefits does not reinforce vulnerabilities or exclusion for marginal groups such as women.

Public, private or community-based funding structures that aim to enhance adaptation to the climate change events need to consider women extensively.

62 Pionetti, Carine (2016). Filling buckets, fuelling change. UNDP Canada, pp. 60.

63 Gonda, Noemi (2016). Climate Change, "Technology" and Gender: "Adapting Women" to Climate Change with Cooking Stoves and Water Reservoirs. Gender, Technology and Development, 20:2, 149-168, DOI: 10.1177/0971852416639786.

6.2 Applying the tool

The application of Her4Climate is based on three guiding principles:

Participation

The tool promotes meaningful participation of women in the assessment as the best way to understand women's exposure to climate impacts in urban contexts, and their capacity for response. Also, the tool promotes women's empowerment and active participation in defining and implementing strategies and actions. Hence, data and information should be collected in a participatory way to capture women lived experience, combining desk research with in-depth interviews, focus groups and workshops with women, local communities, experts, and decision makers.

Intersectionality

The tool emphasises the importance of including intersectional considerations wherever possible, particularly how overlapping identities and experiences (such as age, ethnicity, indigeneity, (dis)ability, socioeconomic class) can compound the marginalisation of certain social groups. Women are not a homogenous group, hence the tool considers the diverse elements and influencing factors that shape a person's lived reality in addition to gender, given the deeply entrenched and gendered sociocultural norms across all regions of the world. It also encompasses experiences beyond the gender binary (i.e., "man" and "woman"). For example, people identifying as part of the LGBTQIA+ community can be particularly at risk and excluded from climate-related disaster preparedness and recovery efforts.

Viability

Her4Climate applies two generalisations to answer the specific requirements in time-constrained and data-limited situations. First, the tool refers to "women" as a homogenous group when discussing climate impacts and gender-responsive interventions, and users are invited to apply the concept of intersectionality wherever possible. Second, the tool refers to "climate change effects and related hazards", when discussing short-, medium- and long-term impacts of climate change. This means that detailed understanding of specific hazards is beyond the scope of this tool. It also focuses on climate adaptation and excludes considerations on climate mitigation.

6.3 Indicators and Questions for the Assessment

Her4Climate tool provides two stages, which users can follow as they work towards understanding which elements and actions should be considered to ensure a gender-transformative approach to climate change adaptation. They include:

Stage 1:
Baseline and Exposure

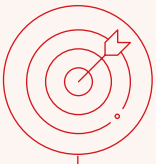
Stage 2:
Sensitivity and Adaptive Capacity

When measuring women's vulnerability to climate change, and their transformative adaptive capacity, there are **three important concepts** to consider:

- **Exposure:** The level of climate stress on a city or community, including the frequency, severity and type of climate change effects and related hazards.
- **Sensitivity:** The level of impact a climate stress has on specific individuals and groups, including the economic, physical and social characteristics which increase the likelihood of negative impacts.
- **Adaptive Capacity:** The ability of individuals and groups to adjust to and withstand climate change effects and related hazards in the short-term, and fully recover in the long-term.

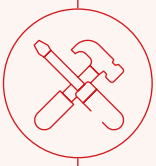
Activities in each stage are undertaken through the lenses of the three dimensions covered in the previous section, and their underlying factors.

Stage 1 — Baseline and Exposure



AIM

The aim is to understand the level of climate stress on women living in the targeted area from a high level/city perspective, including the frequency, severity and type of climate change effects and related hazards on physical infrastructures, ecosystems, people and communities. This includes collecting data related to the targeted area's social, political, economic and gender equality conditions; climate change risks, hazards and scenarios; existing climate policies and plans, including issues/barriers for implementation and gaps; as well as perceived climatic trends, variability and extremes. This stage includes both quantitative and qualitative data, and shall employ sex-disaggregated data and gender indicators for context setting and baseline definition. This stage targets mainly the city or neighbourhood/community scales.



TOOLS

This stage consists of desk-based research and semi-structured interviews with key institutional stakeholders (e.g., selected municipal officials) and local experts (e.g., practitioners, academics). The desk-based research explores the available data sets (such as the number of households in the targeted area, socio-economic data, existing gender analysis, climate data, climate and gender policies) as well the past, existing and planned projects and initiatives that consider gender and climate adaptation. Semi-structured interviews should be conducted with municipality officers (department of stormwater management, public works, environmental planning, climate protection), local scientists (university staff, councils, institutes), NGOs (environmental, human rights, humanitarian assistance programmes), community champions and leaders. This stage may also include an initial survey with stakeholders in the targeted area.

OUTPUT

After the desk review and semi-structured interviews with local authority representatives, the facilitator
is ready to assess the baseline and exposure with respect to the assessed climate hazard on a scale
from 1-5:

- **Level 1 - Poor Adaptive Capacity of the City** - No policies/plans or projects
- **Level 2 - Lacking Capacity of the City** - Policy Debate existing
- **Level 3 - Medium Capacity of the City** - Ad hoc projects in place but no cohesive plans/ policies
- **Level 4 - Good capacity** - Policies/ Strategies adopted but not yet implemented
- **Level 5 - Excellent capacity** - City Scale Projects implemented

The output is a short profile for the city or neighbourhood, that explores the urban context on adaptation to climate change and on gender equality. Information collected through this analysis is further verified and integrated in Stage 2, where women's direct experiences and perceptions are recorded.

Guiding questions: Baseline and Exposure

The table below contains suggested thematic areas for the baseline and exposure study. The questions are divided according to the structure of the tool, across 3 dimensions and 15 factors. In addition to that, Stage 1 involves the group of questions related to the understanding of climate events in the targeted area. **The Assessment team/facilitator should re-design the questions according to the bio-physical and cultural context in focus, and in relation to the main climate events in the locality.**

UNDERSTAND CLIMATE EVENTS	QUESTION
Climate exposure	• Describe sudden/short-term and gradual/long-term climate events in the city and/or the community. • How exposed to climate effects is the community in relation to its location? Consider the present and future time. Are some parts more affected than the others (e.g. in terms of infrastructure disruption, human losses)? • When was the latest major climate event? What damage did it cause in economic costs, destruction of infrastructure, fatalities and injuries? • What was the response to this event? Who was affected and who was excluded? Who is responsible for emergency response and aid provision? (Discuss the existing social and institutional networks, local knowledge, institutional arrangements, natural and economic resources).

DIMENSION	FACTOR	QUESTION: BASELINE AND EXPOSURE
Built and Natural Environments	Tenure security	• Does the city have up-to-date cadastre records and/or initiatives/investments supporting land tenure security? • Are women entitled to individual or collective land-ownership arrangements?
	Housing	• What are the main housing typologies in the targeted area? What's the percentage of women headed households? • What measures are in place to prevent/restore safe and adequate housing conditions in case of climate events? (temporary shelter provision, early warning system, resilient planning, water drainage systems, sea walls, retention ponds, construction with sustainable materials) • How are women's needs considered in these measures?
	Mobility	• How secure is the physical and social access to different city services (e.g., hospitals, schools, emergency services, city government)? Consider flexibility, proximity and availability of these services. • Does the municipality have a spatial understanding of high-risk areas and actions in place to maximise access of vulnerable areas and prioritise evacuation?
	Infrastructure	• How have climate events impacted critical infrastructures (e.g electricity outage, phone infrastructures, warehouse etc) in the city? How will they impact in the future, under different Representative Concentration Pathway scenarios? • What policies and projects are in place to respond to the frequent climate events? (e.g public information campaigns, mini/solar grids, investments in critical infrastructures in vulnerable areas, collaboration across sectors)
	Ecosystems	• How have climate events affected, and will affect the environment and nature benefits/resources (e.g food/seafood, forest products, marine products, raw material, fresh water, tourism)? • What nature-based solutions are in place as part of the climate action? (e.g ecological conservation and preservation, risk assessment, water-sensitive infrastructure systems) Are women included in or lead these actions?

DIMENSION	FACTOR	QUESTION: BASELINE AND EXPOSURE
Health and Well-being	Food security	• What actions have been taken to adapt the food systems to climate change effects (e.g planning systems, water drainage, zoning laws, support to small farmers, infrastructures for sustainable food production)? In what way are these actions supporting women? What actions are being led by women?
	WASH	• How have women's access to water, sanitation, and hygiene systems been affected by climate events? What actions/policy/projects are in place to prevent the disruption of the WASH services? (e.g planning systems, water-sensitive interventions, service design innovation, collaborative services)
	Education	• How have the climate events impacted the education opportunities/system for women? What actions are in place to restore/prevent the disruption of the education system?
	Work and earings	• How have climate events affected work opportunities of the community/city, and women specifically (e.g informal work, tourism, fisheries, agriculture etc)? • What are the actions/policies in place to prevent/restore the livelihoods? • What are the everyday responsibilities of women ("care work") of different age in the targeted area?
	Disability/ illness	• What livelihoods/ groups/ individuals are the most vulnerable and why? • What are the major impacts of climate events to health challenges in the area (e.g. water borne diseases)? • Are there policies and systems in place to support persons living with disability and their care in case of climate events?
Governance and Decision-making	Climate hazard awareness and action plans	• Does the city have climate policies and action plans in place (e.g. climate hazard hotspots identified, environmental impact assessment procedures, water management plan, water infrastructures in place, special working groups focused on climate issues)? What are the main challenges for their implementation? Which locations/ sectors/ populations/ ecosystems are the most vulnerable and difficult to reach? Are any of these programmes targeting women specifically? • How is the city creating awareness of citizens about climate events and action plans?
	Community cohesiveness	• Outline the community's socioeconomic characteristics and major ethnic, political or religious trends in the area (including arrivals of displaced persons and refugees). Are some community groups better informed and more active about climate events?
	Civic engagement and political leadership	• How many community groups/organisations operate in the community/city? What services do they specialise in? Are there organisations that target women and/or climate change specifically?
	Technology	• What mechanisms and/or platforms are in place to share information on climate events, plans and policies? Are they measuring the participation of women and men?
	Financing for adaptation	• Are there any financing projects/initiatives in place that target climate change related challenges (e.g. cash assistance, training courses, alternative source of income, material supply)? Are women explicitly involved? In what ways?

Stage 2 — Sensitivity and Adaptive capacity

AIM

The aim is to collectively assess the level of impact that climate events have on women living in the targeted area from the perspective of their lived experiences. This stage further examines women's ability to adjust to and withstand climate change effects and related hazards in the short-term, and fully recover in the long term. This is done in consideration of women's socioeconomic status, knowledge and resources, and the built environments they live in.

TOOLS

This stage is a participatory assessment comprising focus groups and co-creation workshops with women, representatives of the city government, and community groups. Guided by the guiding questions (see below), the Assessment facilitator encourages the participants to share their insights regarding the Sensitivity and Adaptive Capacity of women on a community and neighborhood scale. Depending on the aim of the assessment and resources available, they can be assessed simultaneously or separately.

The assessment centres on the insights of women and is accompanied by background desk-based research undertaken beforehand. It is a participatory approach that captures women's lived experiences and ambitions, and connects them to the identified climate change effects and predictions.

OUTPUT

The assessment of this stage is **perception-based**, through engagement with women, community and local CSOs, etc. In a consensus-based approach, the workshop and focus groups participants jointly decide on the final score for this stage. Consider printing the Her4Climate diagram on a large paper, and using it for the collaborative scoring during the workshop:

- **Level 1 - Poor Adaptive Capacity of Women** - No awareness of the issue and how to cope with it
- **Level 2 - Lacking Capacity** - Awareness of the climate issue but no capacity to cope with it
- **Level 3 - Medium Capacity** - Awareness and some ad hoc actions in place to cope with the climate risk
- **Level 4 - Good capacity** - Presence of organised groups focusing on climate actions and/or support from the Municipal/Government
- **Level 5 - Excellent capacity** - Municipal Plans/Policies implemented or designed where women are engaged/led, community-based practices are strong and implemented

The full assessment emerges from the integration of these two perspectives (Stage 1 and Stage 2) and levels of gender-transformative climate action – high level/city perspective, and on the ground/lived experience perspective. Below are suggested areas to focus the participatory assessment on.

Guiding questions: Adaptive Capacity and Sensitivity

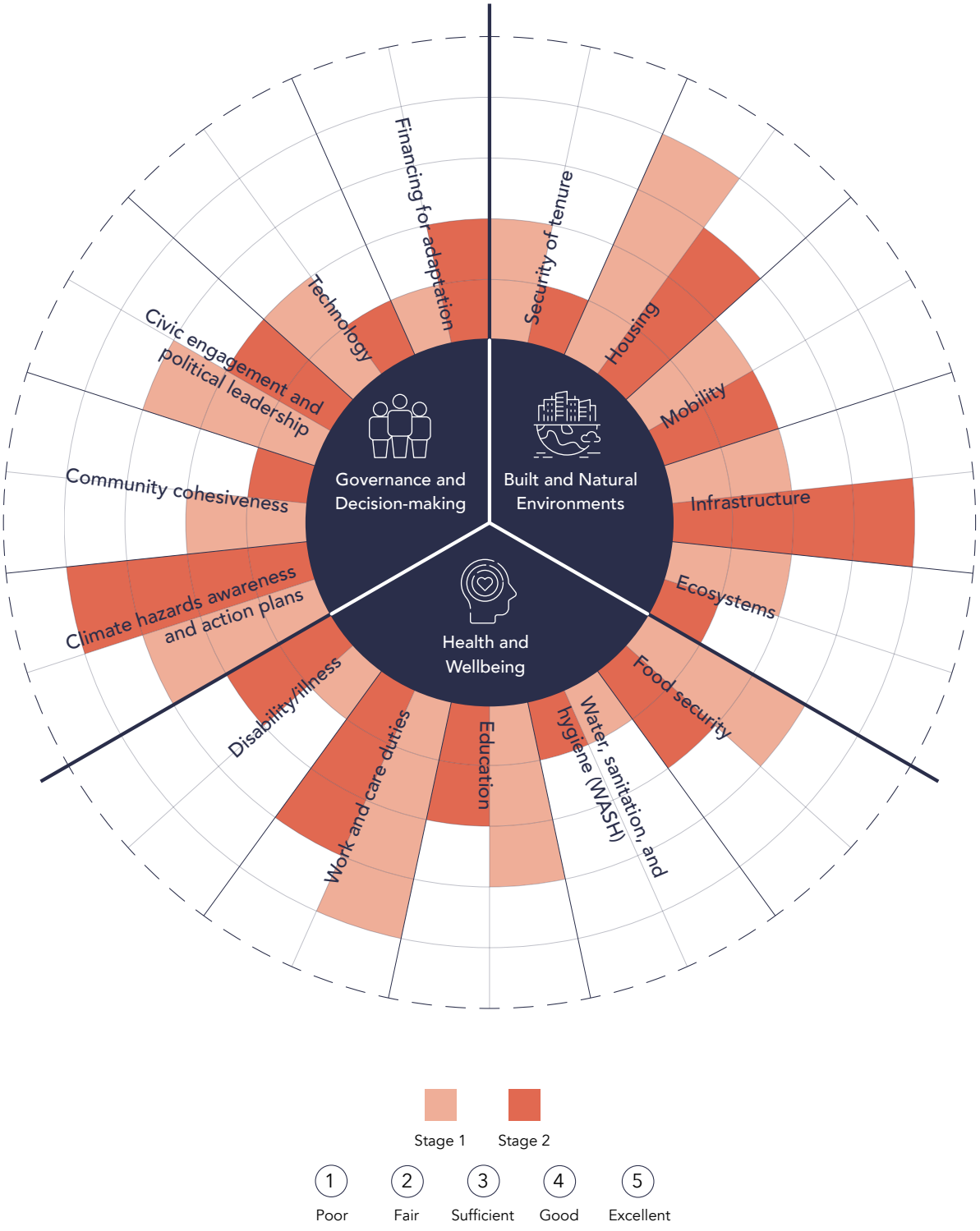
The table below suggests questions to assess both the sensitivity and adaptive capacity of women for the different factors. The Assessment team/facilitator should re-design the questions according to the bio-physical and cultural context in focus, and in relation to the main climate events in the locality. **The combined consideration of women's sensitivity and adaptive capacity through the consensus-based participatory approach yields the score for Stage 2.**

DIMENSION	FACTOR	QUESTION: ADAPTIVE CAPACITY AND SENSITIVITY
Built and Natural Environment	**Tenure security**	• To what extent do you feel safe in the land you live or work in? Discuss ownership, opaque land tenure, state-owned, private-owned, marginal land vulnerable to climate hazards. • Are you and your neighbours doing anything to prepare your land (house, garden) for the future climate events? (e.g. promoting more equitable distribution of land after the climate event, relocation strategies, communal leases, agricultural land ownership schemes)
	Housing	• To what extent have your houses been damaged/affected by climate events? Were there any particular groups/individuals that were impacted more by those events and how? • What kind of housing solutions have been put in place to protect women and vulnerable people from climate events (e.g. new housing owned by women, drainage systems, warning systems, new materials, protecting houses with sandbags)?
	Mobility	• What modes of transport are you usually using and are they affected by climate events? To what extent were you able to access critical locations (e.g schools, hospitals) and everyday locations (e.g. be in contact with family and friends) during and after climate events? • How have you reacted to the changed/disrupted mobility networks during and after the climate event? (e.g. alternative transportation means, work from remote locations, alternative routes, home-schooling, alternative work locations)
	Infrastructure	• To what extent were you able to do your everyday tasks during or after the climate event? What was the most challenging? • What did you do to go back/continue with your everyday tasks in the house? (e.g. keeping food dry, building makeshift high platform, accessing electricity, energy and water networks, getting food)
	Ecosystems	• How do you think the climate events impact your surrounding environment and natural resources? • Are you aware of actions led by women/communities that protect the environment from climate risks? (e.g restauration of water bodies, planting mangroves, urban reforestation, risks awareness)
Health and Well-being	**Food security**	• To what extent was your capacity to provide/produce food for you and your family impacted by climate events? • Have you been involved in activities that improve food security (e.g community-based farming, flood based farming)? Why are they (not) successful?
	WASH	• Can you access clean water during a climate event? Is the water contaminated? • Can you access health and sanitation facilities during a climate event? • Are there any initiatives that improve access to water or toilets? (e.g. women-led water governance groups, use of chemical toilets in the community, water retention systems, construction of flood barriers)

DIMENSION	FACTOR	QUESTION: ADAPTIVE CAPACITY AND SENSITIVITY
Health and Well-being	**Education**	• To what extent have the climate events impacted your or your children's ability to go to school? With which results? (consider long school closures, destruction of schools, early marriages, less education opportunities)? • Are you aware of any activities to prevent children and especially girls from dropping out of schools during climate events? (e.g. community education/ schooling, organised transport to schools further away)
	Work and earnings	• Are women in this neighbourhood in control of revenues generated through projects, activities and communal work (e.g. home gardens, livestock-rearing, other income-generating activities)? • How have climate events impacted your ability to work? (consider both sudden and gradual climate events)
	Disability/ illness	• Where and how do you go for support if you have an illness/ injury? (e.g. involvement of men/ husband, awareness/ pre-preparation, healthcare equipped boats, community assistance) • Are there any people living with disability in this area? • Are there support mechanisms in place that would protect people living with disability from climate hazards and effects?
Governance and Decision-making	**Climate hazard awareness and action plans**	• What are the climate events that you have experienced in the past? What was their frequency, timing, duration and extent? • How do you share/get the information about climate events? • During the past climate events, what was the community's response? What is the response of the municipality, scientists, NGOs, civil society organisations? • To what extent are you aware of current plans/strategies the city is undertaking to adapt to climate events? In the event of a climate hazard, what evacuation plans and procedures are in place?
	Community cohesiveness	• Is it common for people in your community to argue/disagree/conflict with each other during or after climate events (e.g. about access to clean water)? Who manages the conflicts? How do they usually resolve? • In case of necessity do you have somebody to reach out to within the community/neighbourhood?
	Civic engagement and political leadership	• How do you consider your direct contribution in leading and implementing actions against climate events? Do you feel listened to by local politicians? • Have women (and to what extent) been able to influence the design of climate action innovation and interventions?
	Technology	• Are you aware of technologies for forecasting and coping with climate risks in your area? Do you use them? (e.g. mobile phone warning systems, weather forecast).
	Financing for adaptation	• To what extent do you have access to finance and insurance programmes for you to cope with the impacts of climate events? (e.g. supporting risk-reduction measures, transition to diversified sources of income, safety nets) • Are there any programmes that enable you to secure control (individually or collectively) of resources such as land, irrigation, improved seeds, livestock or credit?

6.4 Visualisation of Results

The tool uses scores ranging between 1 (inner circle) and 5 (outer circle) to indicate how well a city/community performs against each factor, where 1 indicates "poor performance" and 5 indicates "excellent performance". A consolidated score for each factor can be developed to enable users to analyse results and assess the performance of the site against benchmarks. The Assessment team/facilitator will decide on the score for the Baseline and Exposure stage, while women directly will assign a score to the questions on Sensitivity and Adaptive Capacity through a participatory process (consensual manner).



07

Water • Energy • Food • Ecosystems

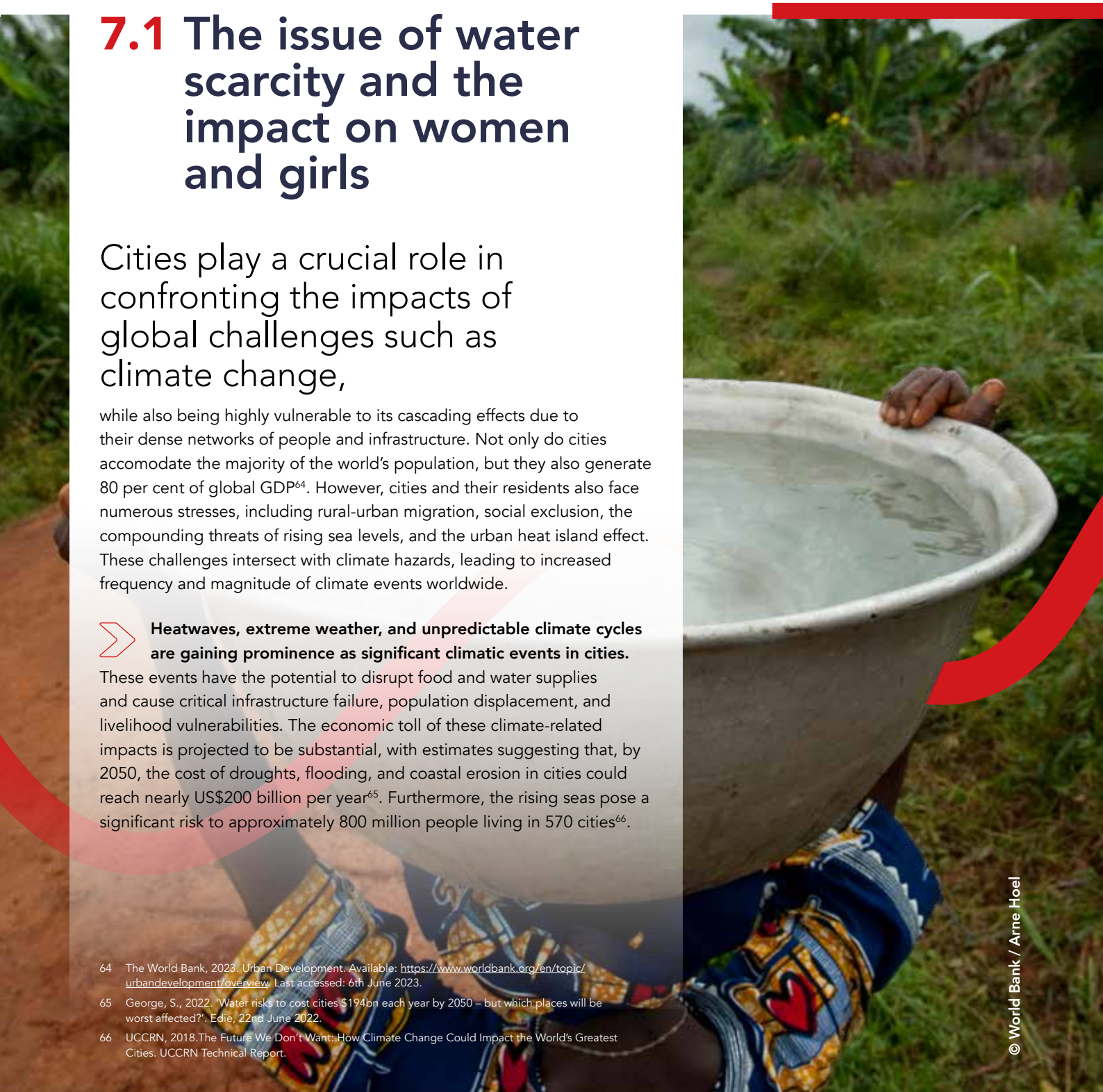
Her4WATER: A tool to assess women's vulnerability to water scarcity and engagement in water governance

7.1 The issue of water scarcity and the impact on women and girls

Cities play a crucial role in confronting the impacts of global challenges such as climate change,

while also being highly vulnerable to its cascading effects due to their dense networks of people and infrastructure. Not only do cities accomodate the majority of the world's population, but they also generate 80 per cent of global GDP[64]. However, cities and their residents also face numerous stresses, including rural-urban migration, social exclusion, the compounding threats of rising sea levels, and the urban heat island effect. These challenges intersect with climate hazards, leading to increased frequency and magnitude of climate events worldwide.

Heatwaves, extreme weather, and unpredictable climate cycles are gaining prominence as significant climatic events in cities. These events have the potential to disrupt food and water supplies and cause critical infrastructure failure, population displacement, and livelihood vulnerabilities. The economic toll of these climate-related impacts is projected to be substantial, with estimates suggesting that, by 2050, the cost of droughts, flooding, and coastal erosion in cities could reach nearly US$200 billion per year[65]. Furthermore, the rising seas pose a significant risk to approximately 800 million people living in 570 cities[66].



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64 The World Bank, 2023. Urban Development. Available: https://www.worldbank.org/en/topic/urbandevelopment/overview. Last accessed: 6th June 2023.

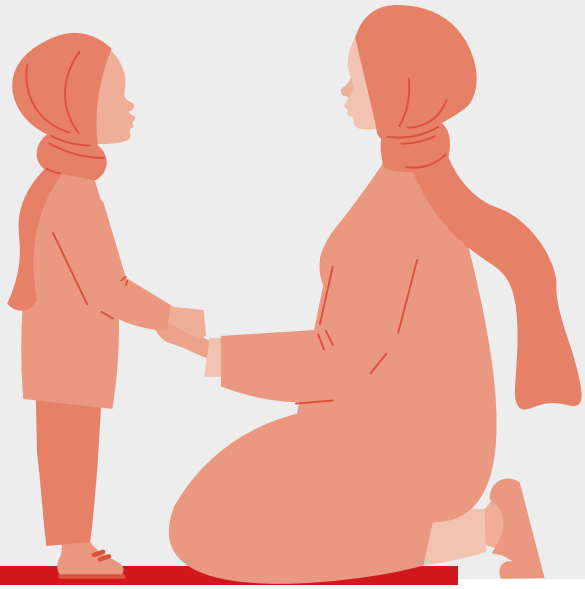
65 George, S., 2022. 'Water risks to cost cities $194bn each year by 2050 – but which places will be worst affected?'. Edie, 22nd June 2022.

66 UCCRN, 2018.The Future We Don't Want: How Climate Change Could Impact the World's Greatest Cities. UCCRN Technical Report.

Women and girls are among the worst affected by the climate crisis due to their social roles and responsibilities. This is especially evident when it comes to

issues related to water, where women and girls may face profound challenges.

Although they play a key role in providing livelihoods and food security, their ability to act on the management of water resources often remains limited. In the Middle East and Northern Africa region, for instance, data reveal stark gender imbalances in occupations related to water. In Palestine, only 4.5 per cent of water, sanitation, and hygiene workers are women, while in Jordan, just 12 per cent of the staff at the Water Authority of Jordan are female. Similarly, in Morocco, the public service infrastructure is heavily male-dominated, resulting in a scarcity of women in decision-making roles (11.8 per cent from 2011 to 2020) and a low presence of women in the workplace (34.5 per cent)[67].



Amidst these circumstances, it is essential to develop a comprehensive tool that integrates a gender perspective to address water-related challenges and empower women in urban and peri-urban areas.

Such a tool will serve as a vital resource for creating gender baseline knowledge, raising awareness, and strengthening the capacity of local actors to collect and analyse sex-disaggregated water data. The tool will contribute to the development of more inclusive and sustainable water management policies and projects that benefit not only women and girls, but also the entire community.

The tool was designed to be easily applicable in field environments, including marginalised local communities. It can be used in urban and peri-urban areas, spanning across different contexts from cities to neighbourhoods and communities. The tool is operative, user-friendly, and easily printable, enabling effective data collection through engagement with women and girls, community leaders, city officials, and civil society stakeholders.

This tool aims to empower women and girls to actively contribute to water management and to promote their participation and leadership in climate adaptation initiatives by harnessing their knowledge and capacities. Ultimately, this tool can help strengthen resilience, promote sustainability, and improve the overall well-being of communities affected by water scarcity in urban and peri-urban areas.

67 Constantianos, V., 2021. Empowering Women in Water Diplomacy in the Middle East and North Africa: A Comparative Study of Egypt, Jordan, Lebanon, Morocco and Palestine, Global Water Partnership. Ghana. Retrieved from https://policycommons.net/artifacts/2100852/empowering-women-in-water-diplomacy-in-the-middle-east-and-north-africa/2856149 on 10 Jun 2023. CID: 20.500.12592/nm117b.

7.2 Objectives of the Tool

By employing a series of specific questions, this tool enables the collection of both qualitative and quantitative data, providing valuable insights into two key aspects: the vulnerability of women and girls to water scarcity and their level of engagement, participation, and leadership in the management and governance of water resources.

Vulnerability Assessment

This tool assesses the vulnerability of women and girls to water scarcity and related issues. It delves into the specific challenges they face in accessing sufficient and clean water and understanding the impacts on their livelihoods, socio-economic conditions, and overall well-being. Assessing individual vulnerabilities of and with women allows developing targeted interventions to meet women's particular needs and assure their resilience in the face of water-related challenges by comprehensively understanding their unique vulnerabilities. Section 3.3 outlines the suggested steps to assess the vulnerabilities, risks and impacts of water scarcity on women and girls.

Engagement and Leadership Assessment

Another critical aspect that the tool will evaluate is the level of engagement, participation, and leadership of women and girls in the management and governance of water resources. It examines their involvement in decision-making processes, their representation in water-related initiatives, and their roles in shaping policies and strategies. This allows identifying gaps and opportunities to improve women's empowerment and encourage their active participation in water management and governance by evaluating their present level of engagement and leadership. Section 3.2 describes the proposed steps for assessing women's engagement in water governance.

The outputs of the assessment and related analysis can support city officials, development practitioners, and community organisations to influence and shape plans, strategies, and projects aimed at improving water resources access and quality. By leveraging the tool's output, stakeholders can make evidence-based decisions, foster inclusive policies, and implement water management interventions that empower women and girls, improve their quality of life, and create more sustainable and equitable communities.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7.3 Applying the Tool

The following checklist outlines the suggested steps and considerations for conducting a comprehensive assessment using this tool.

Preparation and Desk Research

- **Begin** by gathering relevant information and conducting desk research on water scarcity, quality, and access, as well as climate change and climate patterns in the area of focus, gender-related cultural and social dynamics.
- **Review** relevant documents, policies, and plans related to water governance and gender inclusion.
- **Conduct** field observations to assess water points and household conditions, as well as activities that necessitate intensive use of water such as urban agricultural spots and gardens. Note factors such as accessibility, availability, and quality.

Assessment of women's engagement in water governance

- **Identify** key national and local stakeholders and frameworks for gender-responsive water management and governance.
- **Conduct** key informant interviews with stakeholders such as community leaders, city officials, local researchers and university members, and representatives from local organisations involved in water resource management and policy.
- **Refer** to the indicators and questions in section 4.1 to conduct the interviews with the relevant stakeholders.

The answers of the interviewees should be documented in the form of comments and quotes to generate qualitative data and results.

3 Assessment of risks and impacts of water scarcity on women and their communities

- **Implement** the tool in a participatory setting involving women and girls, and other community members and relevant stakeholders. Use a gender-sensitive approach to set up the focus group / workshop environment, making sure that women and girls will feel comfortable speaking in the chosen space and that the schedule will enable them to join, given their daily responsibilities.
- **Use** a combination of semi-structured interviews and focus group discussions to gather qualitative data on women's experiences, challenges, and perceptions of water scarcity and management. If it seems appropriate for the data collection, other participatory methods, such as city walks, community mappings, or photovoice, etc., should be employed.
- **Refer** to the indicators and questions in section 4.2 to conduct the focus groups, workshops, and other participatory methods.

Answers and interventions of the participants should be documented as comments and quotations to generate qualitative data and results.

4 Reporting on the Indicators and Diagram

- **Assess**, organise and select the answers from the focus groups and interviews.

  On the basis of the collected answers and evidence, decide on a score/rating for the indicator. See section 4 to understand the rating system and section 5 to understand the visualisation of indicators. In addition to the collected qualitative data, the rating system serves as a framework for assigning scores or ratings to indicators based on the collected data and participants' assessments, ensuring an easier interpretation of the results and facilitating the comparison across cities.

- **Analyse** the collected data and translate it into an appropriate format (report, policy brief, action plan) to highlight the findings and key indicators related to water scarcity and gender dynamics.
- **Present** data in an accessible format, such as diagrams or visualisations, to enhance understanding and facilitate data-driven decision making.

5 Setting Up a Follow-up Plan

- **Communicate** the results of the assessment to the participants and relevant stakeholders and, together with them, set up a follow up plan to identify next steps and actions based on assessment findings and recommendations.
- **Collaborate** with relevant stakeholders to design interventions that address the identified gaps and empower women and girls in water resources management. See section 6 for specific post-assessment recommendations.
- **Ensure** that the plan includes strategies for monitoring and evaluating the impact of interventions as well as mechanisms for ongoing community engagement.

By following this checklist, an assessment can be conducted systematically to ensure that all relevant aspects of water scarcity, gender dynamics, and participation are captured. The participatory nature of the tool will enable a holistic understanding of the challenges and opportunities, laying the foundation for informed decision making and the implementation of effective strategies and projects.

7.4 Indicators and Questions for the Assessment

The following questions and related indicators should be used during the focus group discussions and interviews to assess the level of participation and engagement of women and girls in the governance of water resources in the city/community, and the level of vulnerability of women and girls to water scarcity. If needed, indicators and questions can be modified to fit the local context of the selected assessment area and conditions.

4.1 INDICATORS FOR THE ASSESSMENT OF WOMEN'S ENGAGEMENT IN WATER-RELATED POLICY AND GOVERNANCE

INDICATOR	SAMPLE QUESTIONS
Number of female/male staff in different job positions within the water management sector and water governance institutions	• How many women and men are employed in various job positions within municipal units, organizations, or public/private utilities dealing with water resources? • Are there any noticeable gender disparities in terms of staff representation and job levels (e.g., representation at managerial director level positions, manual or intellectual jobs, or secretarial positions) in these entities?
Presence of job positions for gender policy and concerns	• Are there designated job positions, such as Gender Focal Point or vulnerability inclusion specialists, responsible for addressing gender policy and gender concerns within the municipal team or public/private utilities dealing with water resources? • What is the role and level of engagement of these positions in promoting gender equality and addressing gender-related issues in water accessibility?
Presence and role of local women's groups/organizations	• Are there any local women's groups, organizations, or self-help support initiatives to manage local drinking water or irrigation schemes? • What is the extent of involvement and influence of these groups in decision-making processes and activities related to water management?
Presence of gender-sensitive water policy frameworks	• Are there existing water policy frameworks at the sectoral level that incorporate gender-sensitive, responsive, or transformative approaches? • What is the current status of implementation of these frameworks strategies (e.g., planning phase, early implementation, full implementation)? • Is there a specific Gender Action Plan at the city level for the sector?
Sectoral budget with gender considerations	• Does the sectoral budget allocated for water resources management include specific considerations or key performance indicators (KPIs) related to gender equality and empowerment? • How are these gender considerations reflected in the allocation of financial resources and implementation of water-related projects?
Female participation in water commissions	• To what extent do women participate in water commissions or decision-making bodies related to water governance? • What are the reasons behind the participation or non-participation of women in these commissions?

4.1 INDICATORS FOR THE ASSESSMENT OF WOMEN'S ENGAGEMENT IN WATER-RELATED POLICY AND GOVERNANCE

INDICATOR	SAMPLE QUESTIONS
Water projects including gender considerations	• Are gender considerations and women's needs incorporated into the planning, implementation, and evaluation of water-related projects? • How do these projects address gender disparities, promote women's empowerment, and ensure equitable access to water resources?
Availability of gender-disaggregated data	• Is there a system in place to collect and maintain gender-disaggregated data related to water resources accessibility and management? (e.g., community forums, surveys, information campaigns, and other data collection mechanisms). • How accessible is this data, and is it utilized to inform decision-making processes and assess the gender impact of water initiatives?

For this first part of the assessment focusing on policy and governance and conducted through interviews with key informants at the city level, the evaluator will decide the rating between 1 and 5 based on the answers and outputs of the interviews. Here's a suggested guide for assessing the ratings:

SCORE	OUTPUT
1	Nonexistent policy, framework, strategy, or debate
2	Poor policy, framework, and participation, but debate in place
3	Existence of scattered initiatives but no policy in place
4	Policies, frameworks, and strategies adopted but not yet implemented
5	Policies, frameworks, and strategies adopted and implemented at the city level

4.2 INDICATORS FOR THE ASSESSMENT OF RISKS AND IMPACTS FOR WOMEN AND THE COMMUNITY TO WATER SCARCITY

INDICATOR	SAMPLE QUESTIONS
Perception of the issue	• How would you assess the issue of water access and quality in your community? Do you consider it a high, medium, or low-risk challenge?
Access to water resources	• How does your household obtain water? Is the household connected to the piped water system (connection to the main system for both drinking and non-drinking water, presence of water sources in the building)? Or do you purchase water from vendors or rely on unprotected sources (private vendors, collection of water from street fountain, etc.)? Please describe.
Direct risks (lack/cost of water for various uses)	• Are you facing challenges related to the lack of access to water for drinking, hygiene, and household uses? If so, could you share the specific difficulties?
Indirect risks (food supply, energy, violence)	• Have you noticed any impact due to water scarcity, such as impacts on food supply, food prices, or energy costs? Have you ever felt unsafe when having to go buy/collect water?
Decision making and responsibilities on household level	• In your household, which roles and responsibilities are you assigned to? What roles and responsibilities are assigned to different individuals based on their sex, age, and position regarding water-related tasks? Who decides how to use the available water resources?

4.2 INDICATORS FOR THE ASSESSMENT OF RISKS AND IMPACTS FOR WOMEN AND THE COMMUNITY TO WATER SCARCITY

INDICATOR	SAMPLE QUESTIONS
Access to water and sanitation in public spaces	• How would you describe the accessibility of water and sanitation facilities in public spaces or communal areas within your community? Are there public fountains available in your neighborhood? Is the water drinkable or only usable for cleaning and irrigation purposes?
Impact on education and livelihoods	• Have water scarcity and related issues had a negative impact on your life, the possibility of studying or going to school, or your job and livelihood? If so, please provide examples.
Impact on agricultural use of water	• Has water scarcity had an impact on the possibility of using water for irrigation or for livestock care? If so, please provide examples.
Coping mechanisms for water scarcity	• How do you and your community cope with water scarcity and its impacts? Are there any specific strategies or practices you employ (collection and storage, purification of water through chlorine products, etc.)? Please elaborate.
Traditional knowledge on water systems	• Are you aware of any traditional practice for collecting canalising, or improving access to water for household and irrigation purposes? How did you learn this practice? Have you shared this knowledge with your family, community, or friends?
Municipal climate change adaptation measures	• Are there any specific measures or actions being taken in your community or municipality to adapt to the impacts of water scarcity? If yes, please describe them (retention or accumulation of rainwater in tanks, desalination, dwell extraction, etc.).
Gender-based barriers and discrimination	• Have you ever felt discriminated against when trying to access water resources or participating in decision-making processes for water management? If yes, please elaborate.
Community participation and empowerment	• Are there opportunities for women and girls to actively participate and engage in water-related decision-making processes or community initiatives? Are you aware of existing organizations community groups campaigns or initiatives? Do you participate in any committees initiatives, etc.? If yes, please provide examples.

In this second part of the assessment, focusing on women's and community risks and vulnerability to water scarcity, the rating between 1 and 5 will be determined through a consensus-based approach. The participants, along with the evaluator, will collaboratively decide on the scores for each indicator during the focus group or workshop. Here's a suggested format for providing the ratings:

SCORE	OUTPUT
1	Highly unsatisfactory
2	Unsatisfactory
3	Satisfactory
4	More than satisfactory
5	Highly satisfactory

7.5 Visualisation of Results

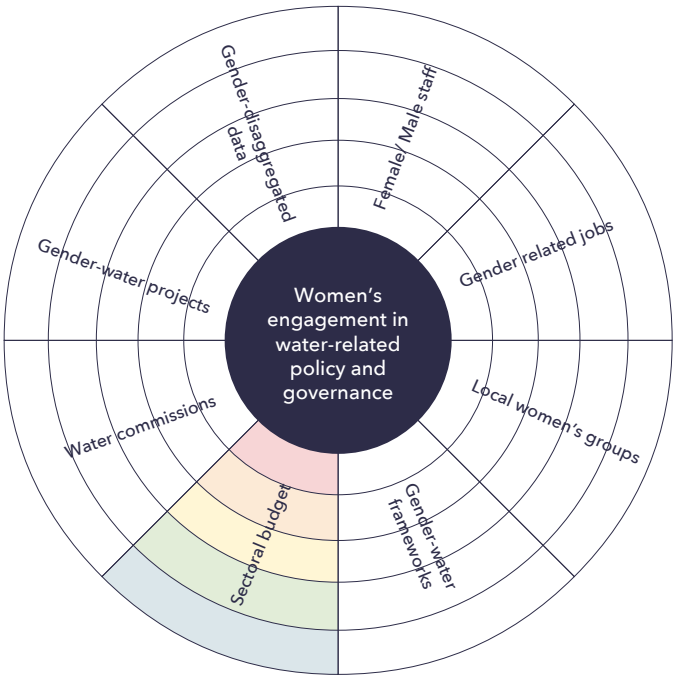
The results of the assessment can be showcased in circular diagrams, as shown below, one for each part of the assessment.

The charts display the different indicators and their respective values. Each indicator can be represented by a different coloured segment within each bar, showcasing the relative proportions. These charts can be used to compare and analyse the importance and severity of each indicator, enabling stakeholders to gain a comprehensive understanding of the overall water scarcity situation.

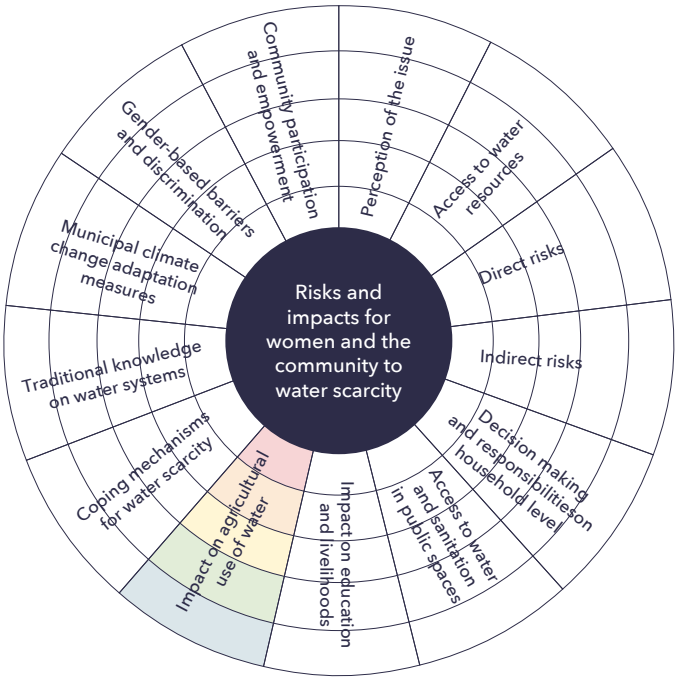
For the first part of the assessment focusing on policy and governance, the evaluator will decide on a rating between 1 and 5 based on the answers and outputs of the interviews conducted with key informants.

In the second part of the assessment, focusing on women's and community risks and vulnerability to water scarcity, a rating between 1 and 5 will be determined through a consensus-based approach. The workshop and focus group participants, along with the evaluator, will collaboratively decide on the scores.

1. Women's engagement in water-related policy and governance



2. Risks and impacts for women and the community to water scarcity



SCORE	OUTPUT		
1	Nonexistent policy, framework, strategy, or debate	1	Highly unsatisfactory
2	Poor policy, framework, and participation, but debate in place	2	Unsatisfactory
3	Existence of scattered initiatives but no policy in place	3	Satisfactory
4	Policies, frameworks, and strategies adopted but not yet implemented	4	More than satisfactory
5	Policies, frameworks, and strategies adopted and implemented at the city level	5	Highly satisfactory

08

Water • **Energy** • Food • Ecosystems

Her4ENERGY: A Tool to Assess Women's Empowerment in Climate-Resilient Energy Systems

8.1 Gender Disparities in the Energy Sector

The crossing of gender dynamics with the energy sector,

particularly within the context of climate change, presents a complex landscape that requires an intersectional perspective of combined gender and social equity aspects.

This approach highlights overlapping inequities and is critical in analysing efforts to mitigate climate change through low-carbon energy technologies. Extensive research over the past 30 years – notably by ENERGIA, the international network advocating for gender and sustainable energy – has significantly influenced this field. The research underscores the deeply gendered nature of both the production and consumption of energy.[68] It was initially sparked by findings in the least developed countries of Africa and Asia, where up to 90 per cent of energy consumption in households comes from traditional biomass fuels primarily gathered and managed by rural women.

As the global energy sector shifts towards cleaner and renewable resources that are less harmful for the environment, including advanced biomass cookstoves and/or energy issued from sources replenishing naturally (solar home systems, etc.), there is a growing call from advocacy groups for policies ensuring women's participation in the energy transition and equitable employment opportunities in the energy sector. Yet, the representation of women in leadership roles within the energy sector remains alarmingly low. Studies of 72 nations have found that women hold only 6 per cent of the ministerial roles that shape national energy policies and strategies.[69]

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68 Cecelski, E. 2004. *Re-thinking Gender and Energy: Old and New Directions.* ENERGIA/EASE Discussion Paper. https://advocacy.energia.org/assets/2021/12/Re-thinking-gender-and-energy-Old-and-new-directions-ENERGIAEASE-Discussion-Paper.pdf.

69 Pearl-Martinez, R. 2014. *Women at the Forefront of the Clean Energy Future.* White Paper, Initiative Gender Equality for Climate Change Opportunities(GECCO).IUCN-USAID: Washington, DC. https://portals.iucn.org/library/sites/library/files/documents/Rep-2014-005.pdf.

The global energy sector continues to show significant imbalances in workforce distribution across genders and ethnic groups, with men occupying approximately two thirds of jobs and White employees holding 78 per cent of all positions.[70] Data from various sources, including the International Labour Organization (ILO), shows that in 26 developing countries in Asia and the Pacific, fewer than 20 per cent of employees in the electricity, gas, and water supply industries are women.[71]

These disparities are not confined to employment alone. They are also evident in education related to science, technology, engineering, and mathematics (STEM). Women account for only 35 per cent of STEM graduates, a statistic that has remained unchanged over the past decade, impacting their presence in STEM careers.[72] From 2000 to 2021, the proportion of energy startups with gender-diverse founders increased only marginally, from 3 per cent to 11 per cent. Meanwhile, non-energy startups saw a rise from 14 per cent to 20 per cent over the same period.[73]

There are also significant gender gaps in energy access and utilisation. The International Energy Agency (IEA) reports that women make up only 22 per cent of the global energy workforce, with substantial underrepresentation in technical and decision-making roles.[74] This disparity is particularly pronounced in Sub-Saharan Africa and South Asia, where women often face limited access to modern energy services and opportunities for meaningful participation in energy-related activities.

Energy poverty (a lack of access to affordable energy resources) is profoundly gendered, affecting women who are primarily responsible for household energy management. This lack of resources exposes women to adverse effects, including indoor air pollution and time poverty. Studies have highlighted the gender-specific roles in energy usage, particularly how women use energy for household tasks such as food preparation, emphasising that both the production and consumption of energy are deeply gendered.[75]

The impacts of energy poverty are especially severe in marginalised communities, where limited access to electricity impedes educational opportunities and economic productivity. Energy poverty exacerbates the global gender gap; women make up approximately 70 per cent of the 1.3 billion people in developing countries experiencing poverty.[76] According to 2020 data, roughly 733 million individuals worldwide lack access to electricity, while around 2.4 billion are without clean fuels and technologies for household uses, such as cooking.[77] Factors such as the cost, distribution, and introduction of new energy technologies tend to benefit men more than women.

Energy availability can also have different effects on men and women. For example, power outages during meal prep times can increase the workload for women.[78] Women's roles as primary caregivers and household managers often entail responsibility for energy provisioning and management. Globally, women and girls spend between 2 to 20 hours (or more) per week collecting fuelwood and other traditional energy sources.[79] However, limited access to energy resources constrains their ability to meet household needs efficiently and safely, perpetuating cycles of poverty and gender inequality.

70 Statista Search Department. "Distribution of the Energy Sector Workforce Worldwide in 2022, by Gender and Ethnicity [Infographic]." Statista, retrieved 29 April 2024. https://www.statista.com/statistics/1311080/worldwide-energy-sector-workforce-by-gender-and-ethnicity/pdf.

71 ADB (Asian Development Bank) and ILO (International Labour Organization). 2011.*Women and Labour Markets in Asia: Rebalancing for Gender Equality.* ILO: Bangkok.

72 UNESCO. 2024. *Global Education Monitoring Report 2024, Gender Report: Technology on Her Terms.* Paris. https://unesdoc.unesco.org/ark:/48223/pf0000389406.

73 IEA. 2022. "Gender and Energy Data Explorer." https://www.iea.org/data-and-statistics/data-tools/gender-and-energy-data-explorer.

74 IEA. 2022. "Understanding Gender Gaps in Wages, Employment and Career Trajectories in the Energy Sector." https://www.iea.org/articles/understanding-gender-gaps-in-wages-employment-and-career-trajectories-in-the-energy-sector.

75 Cecelski, E. 2006. *From the Millennium Development Goals Towards a Gender-Sensitive Energy Policy Research and Practice: Empirical Evidence and Case Studies.* Secretariat ENERGIA International Network on Gender and Sustainable Energy: Leusden, Netherlands.

76 European Economic and Social Committee. "#Energypoverty – Women More Likely to Be Affected Than Men." 24 November 2022. https://www.eesc.europa.eu/en/news-media/news/energypoverty-women-more-likely-be-affected-men.

77 IEA, IRENA, UNSD, World Bank, WHO. 2022. *Tracking SDG 7: The Energy Progress Report.* The World Bank: Washington, DC. https://un-energy.org/wp-content/uploads/2022/06/sdg7-report2022-full_report.pdf.

78 Woroniuk, B. and J. Schalkwyk. 1998. *Mainstreaming Equality between Women and Men: Handbook on Gender Perspectives in Energy Sector Development.* SIDA: Stockholm. https://cdn.sida.se/publications/files/sida2203en-mainstreaming-equality-between-women-and-men.pdf.

79 United Nations Development Programme (UNDP). 2007. *Gender Mainstreaming. A Key Driver of Development in Environment and Energy.* UNDP: New York. https://www.undp.org/sites/g/files/zskgke326/files/publications/Gender_Mainstreaming_Training_Manual_2007.pdf.

Even though technology is not an obstacle and policy solutions are well-known, 2.3 billion people worldwide still rely on open fire and biomass fuel for cookstoves and meal preparation, with especially high rates in Sub-Saharan Africa. The lack of access to clean cooking contributes to 3.7 million premature deaths annually, mostly women and children. The IEA has stated that the low representation of women within executive institutions has hindered the adoption of clean cooking policies, and that women-led advocacy is essential to move forward in this area.[80] This example of energy access and use perfectly echoes the wider need for women's involvement and active participation in the energy sector.

The 2018 and 2019 editions of *Tracking SDG 7: The Energy Progress Report* provided data on electricity access rates for male and female-headed households across a selection of countries.[81] In 2018, it was reported that 31 per cent of female-headed households had electricity in the countries sampled. By 2019, electricity access rates for these households varied significantly, from as high as 100 per cent in urban areas and 70 per cent in rural areas of Bangladesh to as low as 65 per cent in urban and 7 per cent in rural areas of Rwanda. Additionally, baselines from the Multi-Tier Framework (MTF) indicate that in Rwanda, only 21.1 per cent of female-headed households had access to electricity.[82] Meanwhile, the Multidimensional Poverty Index (MPI) covering 109 countries shows a wide range of electricity deprivation among female-headed households, from 98 per cent in South Sudan in 2010 to none in Jordan and Albania by 2018.[83]

Despite these challenges, there is growing recognition of the need for gender-responsive approaches in energy governance and climate adaptation strategies. Analysis of 192 national energy frameworks from 137 countries found that only about one third incorporate gender considerations, with most gender-responsive frameworks originating from developing nations in Sub-Saharan Africa[84] and focusing on issues such as time poverty as well as women's health and well-being.

> As climate-related events become more frequent and severe, energy infrastructure faces increased risks of disruption, leading to challenges in energy access, reliability, and affordability, particularly for marginalised communities.

Empowering women to participate in decision-making processes, promoting gender-inclusive policies, and integrating gender perspectives into energy planning are essential steps towards building more resilient and sustainable energy systems. The Her4Energy tool aims to address these gaps by providing a comprehensive framework for integrating gender considerations into climate adaptation and energy resilience initiatives, empowering stakeholders at all levels to advance gender equality and enhance the resilience of energy systems in urban and peri-urban areas.

80 International Energy Agency (IEA). *A Vision for Clean Cooking Access for All*. IEA: Paris. https://www.iea.org/reports/a-vision-for-clean-cooking-access-for-all.

81 IEA, et al. *Tracking SDG 7: The Energy Progress Report*.

82 Koo, Bryan Bonsuk, Dana Rysankova, Elisa Portale, Niki Angelou, Sandra Keller, and Gouthami Padam. 2018. *Rwanda – Beyond Connections: Energy Access Diagnostic Report Based on the Multi-Tier Framework*. World Bank: Washington, DC. http://hdl.handle.net/10986/30101.

82 Ibid.

84 Prebble, M. and A. Rojas. 2017. *The Enabling Power of Energy in Promoting Gender Equality: Gender in the SEforALL Country Action Process Documents*. November 2017 edition. IUCN and USAID: Washington, DC. https://genderandenvironment.org/report-the-enabling-power-of-energy-in-promoting-gender-equality-gender-in-the-seforall-country-action-process-documents-nov-2017-edition/.

8.2 Objectives of the Tool

The tool is designed to address gender disparities and enhancing women's empowerment in the context of climate-resilient energy systems. It employs a series of targeted inquiries that facilitate the collection of both qualitative and quantitative data, providing valuable insights into two key areas:

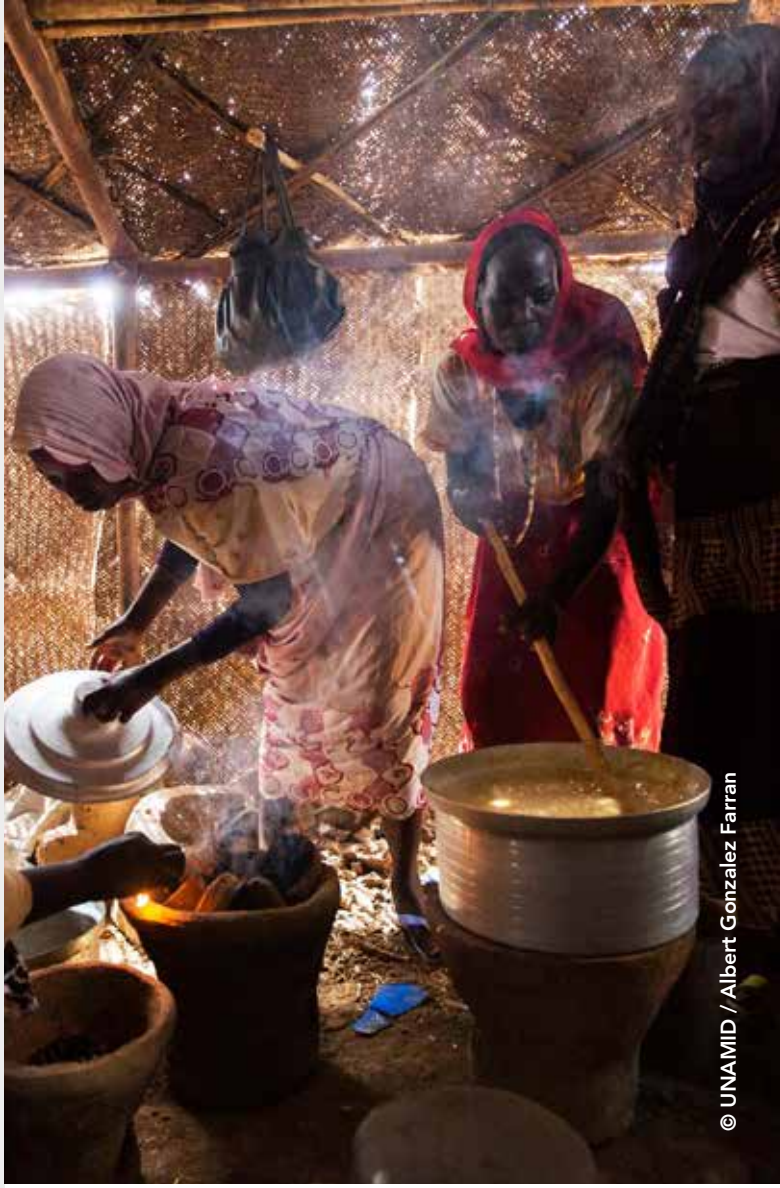
1

Vulnerability Assessment:
The tool assesses the vulnerability of women and girls to energy-related challenges, including access to reliable and clean energy sources. It delves into the specific obstacles they encounter in securing adequate energy resources and reveals the impact on their livelihoods, socio-economic conditions, and overall well-being. By understanding individual vulnerabilities, particularly those experienced by women, the tool enables the development of targeted interventions to meet women's specific needs and enhance their resilience in the face of energy-related challenges.

2

Engagement and Leadership Assessment:
The tool evaluates the level of engagement, participation, and leadership of women and girls in energy governance and decision-making processes. It examines their involvement in shaping energy policies, representation in energy-related initiatives, and role in driving sustainable energy transitions. This allows for the identification of gaps and opportunities to enhance women's empowerment and encourage their active participation in shaping energy systems.

The outputs of the assessment and related analysis can inform policymakers, development practitioners, and community organisations to influence and shape plans, strategies, and projects aimed at promoting gender equality and enhancing energy access and quality. By leveraging the tool outputs, stakeholders can make informed decisions, promote inclusive policies, and implement energy interventions that empower women and girls, improve their quality of life, and contribute to more sustainable and equitable communities.



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8.3 Applying the Tool

The following checklist outlines the necessary steps and considerations for conducting a comprehensive assessment using this tool.

1

Preparation and Initial Research

- Start by gathering pertinent information and conducting initial research on energy providers and access, consumption patterns, climate change impacts, and gender dynamics within the target area.
- Familiarise yourself with existing studies, reports, and data sources that illuminate the intersection of gender and energy access.
- Identify key stakeholders and frameworks for gender-responsive energy planning and governance at both the national and local levels.

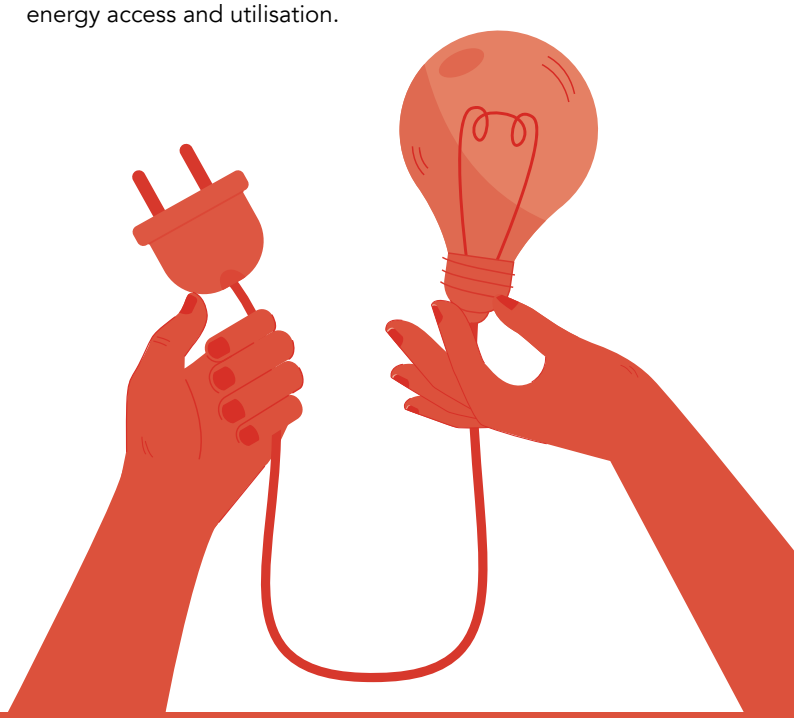
2 Data Collection Phase

Much of the required data on gender and energy may already be available through various sources:

- **Census data** typically includes details on household electricity connections, health, and education status of household members, with the ability to sort by location, social group, and gender.
- **National sample surveys** often provide insights into the type and amount of energy consumed, as well as energy usage in residential and commercial settings. This data usually includes health status and can be analysed according to consumption and income levels, location, and the gender of the household head.
- **Data on energy end-users** is frequently gathered by service providers. In some countries, energy utilities conduct comprehensive surveys focusing on their household consumers.
- **Existing projects**, such as those funded by the Asian Development Bank (ADB), may conduct detailed social and poverty surveys of the affected population, with baseline data that can be sorted and analysed according to consumption, income groups, gender, and location.
- **Relevant country-specific gender and energy studies such as:** Nationally Determined Contributions with recommendations for the energy sector; country gender assessments; reports on Sustainable Development Goal (SDG) 7 advocating for access to affordable, reliable, sustainable and modern energy for all; and other academic research.

3 Participatory Approach and Data Collection

- **Implement** the tool in a participatory manner, engaging women and girls, community members, and relevant stakeholders in the assessment process. Use a gender-sensitive approach to ensure inclusivity and participation.
- **Utilise** a combination of semi-structured interviews, focus group discussions, and participatory methods such as energy mapping exercises or gender-sensitive energy audits to gather qualitative data on gender-specific energy needs, challenges, and aspirations.
- **Design** questions and activities in a gender-sensitive manner to capture diverse perspectives and experiences related to energy access and utilisation.



Once existing data has been collected and analysed to identify gaps, the design of project-specific primary data collection should follow. The methods for gathering primary data can vary, but they should incorporate gender-inclusive and participatory processes such as:

- **Socioeconomic** household surveys
- **Interviews** and exchanges with ministries of energy and national statistical organisations
- **Focus group discussions** that target women, particularly those from economically disadvantaged backgrounds
- **Priority ranking exercises** that allow women to express their needs and preferences distinctly from men
- **Community meetings** that involve mapping and planning activities and encourage active participation from women

4 Analysis and Reporting of Findings

- **Analyse** the collected data, identifying key themes, patterns, and gender disparities in energy access and utilisation.
- **Based on the assessment findings**, develop a scoring or rating system for energy access indicators to quantitatively assess the level of gender inclusivity and equality in energy provision.
- **Translate** the analysed data into actionable insights that highlight gender-specific energy needs, barriers, and opportunities in a format suitable for dissemination, such as reports or policy briefs.
- **Use** visual aids and diagrams to present the data in an accessible manner, enhancing understanding and facilitating evidence-based decision-making.

5 Development of Follow-up Strategies

- **Communicate** the assessment's findings to participants and relevant stakeholders, engaging them in the development of follow-up strategies and action plans.
- **Collaborate** with stakeholders to design gender-responsive interventions and policies to address identified energy access gaps and promote women's empowerment in the energy sector.
- **Ensure** that follow-up plans include mechanisms for monitoring and evaluating the impact of interventions on gender equality in energy access and utilisation, as well as avenues for continued community engagement and participation.

By adhering to this systematic approach, the tool facilitates a comprehensive assessment of gender-specific energy needs and challenges, empowering stakeholders to develop informed strategies and interventions that promote gender equality and sustainable energy access for all.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8.4 Indicators and Questions for the Assessment

The following questions and associated indicators are designed to gauge the extent of women and girls' participation and involvement in energy governance within the city/community and assess their vulnerability to energy scarcity. These indicators and questions can be adapted to suit the local context and conditions of the assessment area.

WOMEN'S ENGAGEMENT IN ENERGY-RELATED POLICY AND GOVERNANCE		
CATEGORY	**INDICATOR**	**SAMPLE QUESTIONS**
Participation	Percentage of women in leadership roles in energy sector agencies or organisations, both public and private	• What are the challenges faced by women aiming for leadership positions within your organisation? • How has the number of women in leadership positions changed over the past five years? • Are there any noticeable gender disparities in terms of staff representation and job levels in these entities? (managerial/ director levels/ representation positions/ manual/ intellectual jobs/ secretary positions)
	Women's participation in decision-making processes	• Describe a recent project where women significantly influenced the decision-making process. • Are there any formal mechanisms in place to ensure women's participation in all levels of decision-making?
	Representation in energy sector conferences and forums	• How does your organisation select representatives for energy sector conferences and forums? • What measures are in place to ensure equitable representation of genders in speaking and panel opportunities?
Influence	Impact of women-led initiatives	• What specific outcomes have been achieved through women-led initiatives within your organisation? • How does your organisation support and promote initiatives led by women?
	Engagement in legislative processes	• In what ways are women involved in legislative advocacy for energy policies? • What recent legislation has been influenced by women, and how?
	Access to necessary resources for leadership (e.g., training, mentoring)	• What specific training programmes are available for women aiming for leadership roles? • How does mentorship in your organisation target the development of women's careers?
Inclusivity	Policies to support diversity and inclusion in the workplace	• How are these diversity and inclusion policies implemented and monitored? • Can you share any success stories or challenges encountered while implementing these policies?
	Gender sensitivity of policy outcomes	• How do you evaluate the impact of energy policies on different genders? • Are gender impact assessments conducted when formulating policies?
	Feedback mechanisms from women stakeholders	• What formal processes are in place for collecting feedback from women stakeholders? • How is this feedback integrated into policy and decision-making processes?

WOMEN'S ENGAGEMENT IN ENERGY-RELATED POLICY AND GOVERNANCE		
CATEGORY	**INDICATOR**	**SAMPLE QUESTIONS**
Empowerment	Professional development opportunities	• How are these opportunities advertised and made accessible to women in the energy sector? • Are there specific barriers that women face when accessing professional development in your organisation?
	Equality in pay and career advancement	• What processes are in place to address and rectify pay inequities within your organisation? • How often does your organisation review promotion criteria to ensure they are gender neutral?
	Advocacy and networking opportunities	• What forums or platforms does your organisation provide for women to network and advocate for their interests? • How does your organisation support women's participation in external advocacy and professional groups?
Socioeconomic Impact	Economic empowerment through energy-related employment	• What opportunities exist for women in the energy sector, particularly in green jobs? • How do energy policies support women's economic empowerment?
	Impact of energy poverty on women	• How does energy poverty specifically affect women in your region? • What measures are being taken to alleviate energy poverty among women?

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PERCEPTION ON RISKS AND IMPACTS FORWOMEN AND THE COMMUNITY		
CATEGORY	**INDICATOR**	**SAMPLE QUESTIONS**
Health Risks	Health issues related to energy production and consumption	• What health issues have women reported in relation to energy production facilities in your area? • How do energy consumption patterns affect the health of women and children in your community? • How does unreliable energy impact food preparation and preservation?
	Exposure to harmful substances from energy sources	• Are women in your community aware of any health risks associated with exposure to energy production byproducts? • What protective measures are available to women exposed to harmful emissions from energy plants? • How does exposure to pollutants from energy sources specifically affect women's and children's health in your community?
	Access to healthcare in energy-impacted areas	• How does energy development affect access to healthcare services, especially for women and vulnerable groups? • Are healthcare facilities in your area equipped to deal with health issues arising from energy-related environmental changes?
	Specific health risks for indigenous women and women with disabilities	• How do energy projects affect the health of indigenous women and women with disabilities in your area? • What specialised healthcare services are available for these groups in regions affected by energy development?
Environmental Impact	Impact of energy projects on the local environment	• How do women perceive the environmental changes brought about by local energy projects? • What concerns do women express about the sustainability of these energy projects?
	Access to natural resources	• How have energy developments affected women's access to local natural resources such as water and land? • Do women feel that energy projects are altering their natural environment and resource availability?
	Land use and environmental sustainability	• How does the change in land use for energy projects affect local biodiversity and ecosystems? • What are the long-term environmental risks of these changes, particularly for women who depend on natural resources? • How do energy developments impact women's land rights?
Economic Impact	Economic displacement and opportunities	• Have any economic displacements (such as job losses in traditional sectors) occurred due to new energy projects? • How have these affected women? • What economic opportunities have arisen from local energy projects for women?
	Impact on household income and energy costs	• How have changes in energy policy or infrastructure affected women's household income? • Are women experiencing changes in energy costs, and if so, how is this impacting their economic situation?

PERCEPTION ON RISKS AND IMPACTS FORWOMEN AND THE COMMUNITY		
CATEGORY	**INDICATOR**	**SAMPLE QUESTIONS**
Economic Impact	Financial inclusion in energy sector investments	• Are there opportunities for women to invest in local energy projects? • How accessible are these investment opportunities to women, particularly in marginalised communities?
	Municipal energy schemes	• What specific measures or plans have been developed to enhance energy access and provision in your municipality? • How are these schemes supporting the use of renewable energy?
	Entrepreneurial opportunities enabled by energy access	• Are there specific entrepreneurial activities that have become viable due to improved energy access in your community? • How does energy access influence the types of businesses women choose to start?
	Access to technical jobs in the energy sector	• What opportunities are there for women to access technical jobs in the energy sector? • What are the main barriers women face when trying to enter technical fields within the energy sector?
Community and Workplace Energy Access	Access to energy in places of work	• How reliable is the energy supply at places where women predominantly work (at home or elsewhere)? • What impact does this reliability have on women's productivity and job opportunities? • How does an unreliable energy supply affect women's economic opportunities and their business potential for self-employment or home-based work?
	Energy access in community centres and public spaces	• How do community centres and public spaces facilitate energy access for women and girls? • What activities are enabled by this access that specifically benefit women or girls in the community?
	Impact of energy access outside the home on women's daily lives	• How does accessing energy outside of the home affect the daily routines of women and girls? • How is girls' education affected by the lack of energy or energy access (such as biomass collection)? • What challenges do women face due to inadequate energy access in public or workplace settings?
	Changes in community dynamics and roles	• How have energy projects impacted the social roles and cultural expectations of women in your community? • Are women's traditional roles being challenged or reinforced due to changes brought about by energy projects?
Social and Cultural Impact	Community displacement and resettlement	• Have there been any community displacements due to energy projects? • How have these affected women specifically? • What support is available for resettled women to integrate into new communities?

PERCEPTION ON RISKS AND IMPACTS FORWOMEN AND THE COMMUNITY		
CATEGORY	**INDICATOR**	**SAMPLE QUESTIONS**
Social and Cultural Impact	Informal energy access	• How do you and your community cope with unreliable, or lack of, formal energy access? • What strategies or practices (e.g., biomass collection and storage, informal electrical connections, using generators, buying gas from private sellers) are employed?
	Social inclusion/exclusion based on energy access	• Does differential access to energy in your community lead to social exclusion or inclusion for certain groups of women? • How does this impact the community dynamics and women's roles within the community?
	Awareness and adaptation to climate change	• How aware are women in your community of climate change issues related to energy use? • What actions are women taking to adapt to climate change impacts exacerbated by energy projects?
	Gendered energy access	• Do men and women have the same access to energy in your community? • Are men and women using energy differently? If so, how and for what?
Climate Change Impact	Role in climate change mitigation strategies	• What roles do women play in local climate change mitigation strategies related to energy consumption and production? • How are these roles supported or hindered by current policies?
	Impact of climate change on resource scarcity	• How has climate change affected resource availability (such as water or agricultural land) in your area? • How do these changes impact women's livelihoods and community roles?
	Awareness of energy policies and rights	• To what extent are women aware of their rights regarding energy access and sustainability? • How well-informed are women about the energy policies that impact their lives?
Awareness and Education	Engagement in energy education programmes	• What opportunities exist for women to learn about energy management and sustainable practices? • How do women engage with these educational programmes, and what barriers do they face?

8.5 Visualisation of Results

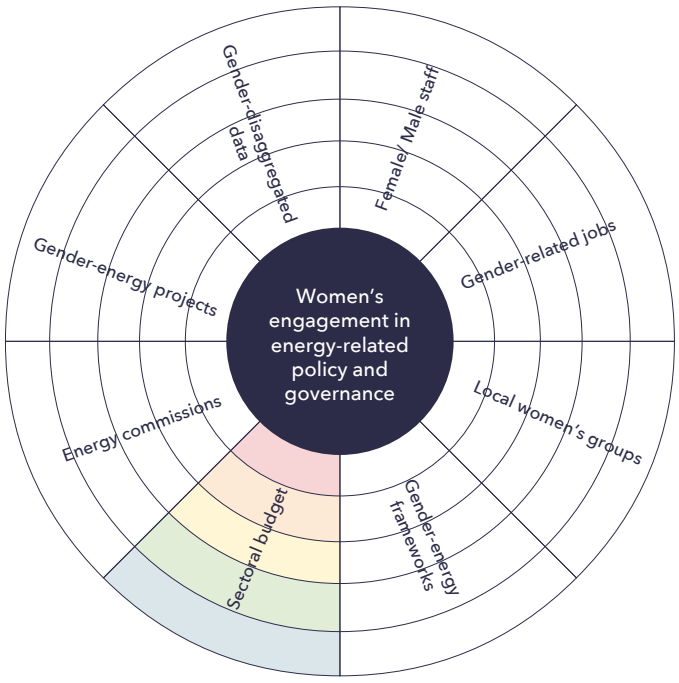
This chart displays the indicators and their respective values. Each indicator will be represented by a different coloured segment within each bar, showcasing the relative proportions. The chart helps illustrate the varying degrees of energy scarcity and its related impacts across different indicators. It can be used to compare and analyse the importance and severity of each indicator, enabling stakeholders to gain a comprehensive understanding of the overall energy scarcity situation.

The results of the assessment can be showcased in the two circular diagrams, one for each part of the assessment: **1.** Women's engagement in energy-related policy and governance, and **2.** perceptions of risks and impacts for women and the community.

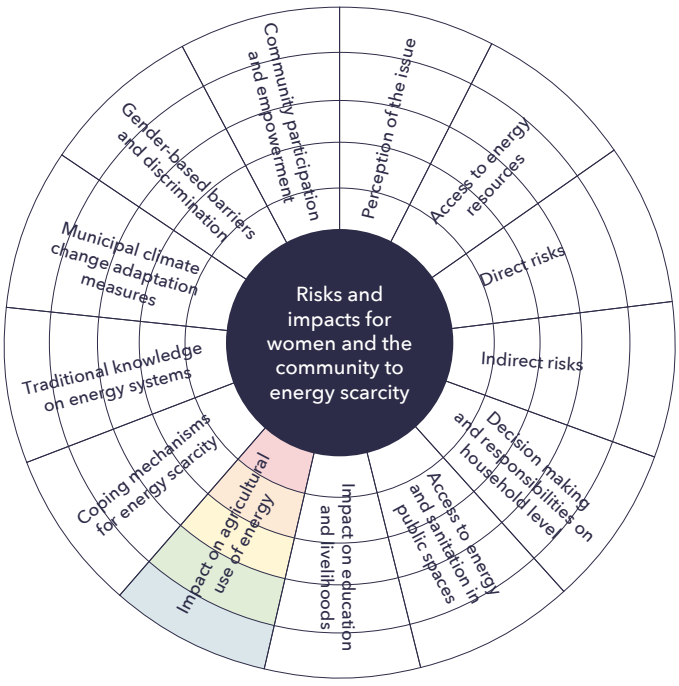
For the first part of the assessment focusing on policy and governance, the evaluator will decide on a rating between 1 and 5 based on the answers and outputs of the interviews conducted with key informants.

In the second part of the assessment, focusing on women's and community risks and vulnerability to energy scarcity, a rating between 1 and 5 will be determined through a consensus-based approach. The workshop and focus group participants, along with the evaluator, will collaboratively decide on the scores.

1. Women's engagement in energy-related policy and governance



2. Risks and impacts for women and the community to energy scarcity



SCORE	OUTPUT		
1	Nonexistent policy, framework, strategy, or debate	1	Highly unsatisfactory
2	Poor policy, framework, and participation, but debate in place	2	Unsatisfactory
3	Existence of scattered initiatives but no policy in place	3	Satisfactory
4	Policies, frameworks, and strategies adopted but not yet implemented	4	More than satisfactory
5	Policies, frameworks, and strategies adopted and implemented at the city level	5	Highly satisfactory

09

Water • Energy • **Food** • Ecosystems

WOMEN: The Key to Food Security

Food production and security are deeply interconnected with ecosystems, water, and the energy sector.

The interdependence between food production and the preservation and access to quality, resilient water systems and ecosystems is evident in erratic rainfall patterns, water scarcity, soaring temperatures, and loss of biodiversity, which pose direct threats to these interconnected systems.[85] The energy sector is also involved at every stage of food systems, from food production and harvest to transport, storage, and conservation. Yet, the overwhelming reliance on fossil fuels is a major driver of climate change and, consequently, food insecurity.

In cities, food security is an increasingly pressing challenge as the global population shifts towards cities and urban centres. With two thirds of the world's population projected to reside in cities by 2050, the rapid rates of urbanisation are likely to pose unprecedented challenges to food security and hunger, particularly in Africa and Asia. Despite this, the urban context and the interconnections between urban and rural ecosystems and agriculture are frequently overlooked in food research and policy.[86] As cities expand, competing uses of natural resources reduce the proportion of arable land, creating more food purchasers with fewer producers. Of the 2.2 billion people in the world experiencing moderate and severe food insecurity, 1.7 billion live in urban and peri-urban areas[87] Women play a central role in household food production, and thus as cities expand, in urban agriculture.[88]

85 IPCC. 2019. *Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems.* https://www.ipcc.ch/srccl.

86 Abu Hatab, A., M.E. Rigo Cavinato, A. Lindemer, and C.-J. Lagerkvist. 2019. "Urban Sprawl, Food Security and Agricultural Systems in Developing Countries: A Systematic Review of Literature." Cities, vol. 94, pp.129–142. https://doi.org/10.1016/j.cities.2019.06.001.

87 HLPE-FSN (High Level Panel of Experts on Food Security and Nutrition). 2024. *Strengthening Urban and Peri-Urban Food Systems to Achieve Food Security and Nutrition, in the Context of Urbanization and Rural Transformation.* CFS HLPE-FSN: Rome.

88 De Zeeuw, H., A. Hovorka, and M. Njenga, eds. 2009. *Women Feeding Cities. Mainstreaming Gender in Urban Agriculture and Food Security.* Practical Action Publishing: Rugby, Warwickshire, UK.

While women's roles in food production and food security vary greatly depending on region, community, and socioeconomic level, addressing food security must incorporate a gender perspective.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Today, despite widespread recognition of the role women play in food security and food systems, a gap persists in gender equality in food systems discourse.[89] A study conducted by the NGO Care in 2020 pointed out that about half of the 73 global reports proposing potential solutions for food security during the Covid-19 epidemic do not reference women and girls at all. Only five proposed solutions concretely targeted gender inequalities, and none displayed gender-specific data.[90] Given the essential role of women in food systems, particularly in developing countries, they should be central to discussions and policies aimed at improving food security. However, women in food systems face a paradox. While they are often the principal caregivers responsible for their families' and communities' well-being and access to food, their roles tend to be undervalued[91] and marginalised in the sector, with fewer responsibilities and possibilities of participation as well as poorer working conditions than men.[92]

Gender inequalities limit women's opportunities in food systems. Women do most of the unpaid work, including gathering firewood, growing food for their families, cooking, and household chores. This limits their educational and economic opportunities compared to men. In cities such as Accra, Ghana, women tend to grow food for their families, while men grow crops to sell for profit.[93]

89 Visser, J. and J. Wangu. 2021. "Women's Dual Centrality in Food Security Solutions: The Need for a Stronger Gender Lens in Food Systems' Transformation." *Current Research in Environmental Sustainability*, vol.3. https://doi.org/10.1016/j.crsust.2021.100094.

90 Care. 2020. *Left Out and Left Behind: Ignoring Women Will Prevent Us from Solving the Hunger Crisis.* Policy Report. London. https://www.care-international.org/files/files/LeftOutandLeftBehind.pdf.

91 Raj, S. 2024. "Gender Dynamics in Food Security," in Raj, S., R. Singh, P. Singh, O. Singh, and D. Borisagar, eds. Food Security, pp 73-76. Mahima Publications.

92 FAO. 2023. The Status of Women in Agrifood Systems. Rome

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Women's paid work is often worse than that of men.

They typically hold irregular, part-time, low-skilled, and physically demanding jobs,[94] selling food rather than producing it.[95] Women still face today barriers that have been identified for decades, including a lack of access to land, capital, technologies, and social networks. With inheritance systems and land tenure laws favouring men over women, men typically own more (and the most fertile) land, making it harder for women to farm effectively. In Niger and Uganda, there are significant gender gaps in productivity due to women's smaller holdings of land, constraining their production opportunities.[96]

These inequalities lead to worse food security for women. In Bangladesh, female-headed households are more likely to be poorer, with more limited social networks, less access to information, and a greater risk of facing social exclusion than male-headed ones. Consequently, female-headed households are more likely to face food shortages.[97] In 2021, 150 million more women than men were estimated to suffer from hunger worldwide – eight times more than in 2018.[98] Climate change is making this situation worse, increasing the risk of hunger for women and girls because they are more vulnerable to its effects.[99]

Improving gender equality in food systems is beneficial for all. If women had the same access to resources as men, their production could increase by 20–30 per cent,[100] boosting global GDP and reducing food insecurity.[101] Empowering women in food production can improve their livelihoods and food security for themselves, their households, and their communities. Successful examples include women's farming associations in Freetown,[102] Cape Town,[103] and an agroecological network in São Paulo[104] that also fights for social justice, community development, gender equality, and women's empowerment.

In order to foster women's full participation in urban food systems and security, cities and local authorities have a critical role to play in bridging the gender gap. To that end, Cities Alliance offers a series of recommendations and actionable steps for cities to address gender disparities and enhance women's empowerment in urban food systems, drawn from best practices around the world.

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97 Clement, F., M.-C. Buisson, S. Leder, S. Balasubramanya, P. Saikia, R. Bastakoti, E. Karki, and B. van Koppen. 2019. "From Women's Empowerment to Food Security: Revisiting Global Discourses Through a Cross-Country Analysis." *Global Food Security,* vol. 23, pp. 160–172. https://doi:10.1016/j.gfs.2019.05.003.

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98 Rai, A., D. P. Ayadi, B. Shrestha, and A. Mishra. 2021. "On the Realities of Gender Inclusion in Climate Change Policies in Nepal." *Policy Design and Practice*, 4(4), pp. 501–516. https://doi.org/10.1080/25741292.2021.1935643.

100 FAO. 2011. The 2010-11 State of Food and Agriculture: Women in Agriculture: Closing the Gender Gap for Development. Rome. https://www.fao.org/4/i2050e/i2050e.pdf.

101 FAO. 2023. *The Status of Women in Agrifood Systems.* Rome. https://openknowledge.fao.org/handle/20.500.14283/cc5343en.

102 Cazdow, H., and T. Binns. 2016. "Empowering Freetown's Women Farmers." Applied Geography, 74, pp. 1–11. https://doi.org/10.1016/j.apgeog.2016.06.010.

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Actionable Steps for Cities

Assess Women's Access to Food

- Conduct surveys at the neighbourhood and city level to understand women's roles in food production and their access to resources such as land, credit, and technology.
- Collect data on women's nutritional status compared to men in the same community.

Identify Patterns

- Analyse the impact of unpaid care work on women's ability to participate in food production.
- Map out the division of labour between men and women in food production and urban food systems.
- Identify barriers women face in accessing resources and opportunities.
- Evaluate women's engagement in food-related policy and governance at the local and city level.

Priorities for Action

Data Collection

- Collect and analyse gender-sensitive data regularly and consistently.
- Pay attention to who is participating in the data collection and who the respondents are, ensuring representation of marginalised communities as well as diverse age and income groups.
- Establish gender-sensitive indicators to monitor progress over time and adapt strategies.

Participation

- Include women and individuals from different backgrounds in strategy design and policymaking related to urban food security and urban food systems.
- Create platforms to encourage women from different backgrounds and experiences to voice their needs and concerns, as well as their aspirations to improve their livelihood strategies through urban agriculture.
- Encourage leadership training programmes for women in urban agriculture.

Policy Reform for Access to Resources

- Advocate for laws that secure women's land rights and reform discriminatory inheritance law.
- Implement policies ensuring equal access to land tenure, water, and tools for all genders.
- Improve women's access to credit, training, and sustainable technology.

Financial Capacity Building

- Ensure women are aware of the possibilities of microcredits.
- Establish microfinance programmes tailored to support women-led initiatives and to overcome gender financial illiteracy.

Awareness Campaigns

- Promote the recognition of women's contributions to food security and the need for gender equality in food systems.

6 Education and Training

- Provide women with nutrition education and training programmes on:
    - Food production, aggregation, processing, distribution, and marketing.
    - Behavioural change for food waste reduction.
    - Climate-smart agricultural practices to enhance resilience.
    - Leadership of community-based networks and partnership with local authorities.
- Provide training and capacity building for urban decision-makers on the benefits of urban food production and the need to foster gender-sensitive urban food systems to build inclusive and resilient cities.

7 Support Networks

- Establish and support women's farming associations to provide a platform for shared resources and knowledge, enabling the creation of support networks favouring solidarity and deepening the sense of community.
- Promote community-supported agriculture models prioritising women and the development of community gardens and urban farms managed by women.
- Foster communication and partnerships between local governments, NGOs, and community groups to support gender-sensitive urban food production

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Focus On: The Power of Collective Action in São Paulo, Brazil

In São Paulo, the creation of an agroecological network of female and marginalised urban farmers was instrumental to local fights for social justice and gender equality. Relying on its participants' wealth of experience, from community gardeners to researchers and city civil servants, the network helped identify the gender-specific challenges to urban farming and stimulate women's economic autonomy. Rooted in the broader agro-ecological movements in Brazil, the network helped spread awareness of racial injustice, gender inequality, and gender-based violence, of which many participants were survivors.

Creating the network enabled the participants to collectively address the barriers limiting the participation of women and marginalised communities in urban agriculture, such as unpaid domestic labour, access to credit, land tenure, and risk of physical injuries due to lack of adapted tools. The power of the collective led to additional positive outcomes, notably the political participation of marginalised women and greater autonomy in urban farming from the city council. Beyond these achievements, the network actively participated in shaping a local agro-ecological popular feminist identity, greater environmental sustainability, and social justice.[105]

105 Carvalho and Bogus, 2020. "Gender and Social Justice in Urban Agriculture: The Network of Agroecological and Peripheral Female Urban Farmers from São Paulo."

Favour projects with localised interventions targeting multiple inequalities

- Identify neighbourhoods with high levels of food insecurity, poverty, and social exclusion to prioritise for urban agriculture projects.
- Develop integrated urban agriculture projects that simultaneously address gender inequality, economic disparity, and environmental sustainability.
- Collaborate with local NGOs, community groups, and social enterprises to design and implement projects tailored to the unique needs of these communities.
- Provide multi-faceted support, including access to nutritious food, income-generating opportunities, and educational resources, that specifically targets marginalised and vulnerable populations.

Actively encourage gender-sensitive urban agriculture in local urban development

- Establish gender equality as a core principle in urban policies.
- Make local urban food production a municipal priority.
- Facilitate land tenure for women of land publicly owned (by the state or city).
- Dedicate a gender-sensitive city budget to urban food systems.
- Facilitate women's access to local markets through dedicated stalls or market days, safe and inclusive food markets, and public spaces for women.
- Design safe and inclusive agricultural spaces with input from women.
- Support the development of green infrastructure in urban farms to mitigate climate impacts.

Monitor and Evaluate

- Adjust programmes and policies to continually improve gender sensitivity in urban food systems and empower women in cities, based on gender-sensitive indicators and feedback from women and different actors in the sector.

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Focus On: Female Producers' Market in Mezitli, Turkey

The Female Producers' Market in Mezitli is a revolutionary project in the region. It is designed to empower women by breaking down social and economic barriers that prevent women's financial independence and by fostering women's self-confidence, socialisation, and active participation in city life. The only requirement was that participants must be a female producer residing in Mezitli.

The project fostered the independence of and empowered 650 women, including asylum seekers, to sell their products in nine markets. An ad-hoc women's assembly was created at the project inception and was involved in each step, from needs assessment to managing the market and monitoring the project, to fostering and encouraging women's participation in decision-making. Local authorities supported the Female Producers Market by amending the local legislative structure and providing access to the stalls free of charge to alleviate the usual economic barriers. Beyond generating income, the project catalysed women's empowerment by deepening the sense of community among female producers and providing a safe place for female purchasers to engage in social interaction. It also increased women's social independence and mobility, with some female producers obtaining a driving licence for their new economic activity.[106]

106 Magarini, A., F. Gavazzeni, D. Zarri, and E. Parreca. 2019. *Milan Pact Awards Report: Lessons Learned from 62 Cities that Shared 104 Food Practices.* Milan Urban Food Policy Pact: Milan. https://www.milanurbanfoodpolicypact.org/wp-content/uploads/2021/08/Report-MPA2019-light.pdf.

Concluding Remarks

Women globally bear disproportionate burdens in securing and managing critical WEFE resources. In urban slums and informal settlements, this manifests as arduous journeys to collect water and fuel, impeding economic opportunities and perpetuating cycles of poverty. Women also often lack decision-making power over infrastructure and service provision related to water, sanitation, energy, and food systems.

Gender-transformative urban planning recognises women as active agents of change. For example, in Delhi, the Mahila Housing Trust[107] has empowered women to lead slum upgrading efforts, from designing sanitation facilities and improving urban governance to managing urban agriculture. Such initiatives and participatory approaches elevate lived expertise and challenge entrenched power structures that have systematically excluded women's voices.[108]

Integrated WEFE initiatives also deliver co-benefits across sectors. In Cape Town, the introduction of water management devices reduced household water consumption while generating financial savings that improved food security.[109] Meanwhile, Nairobi's urban agriculture programme has boosted nutritional intake while providing green spaces that enhance flood mitigation and cool the city.[110]

By connecting WEFE domains, urban planning simultaneously addresses intersecting challenges including resource scarcity, climate vulnerabilities, and gender inequalities. Innovations in renewable energy, wastewater recycling, and urban forestry present opportunities for inclusive interventions that enhance women's empowerment and agency over vital services.[111]

With rapid urban expansion, incorporating gender-responsive planning into the WEFE Nexus is vital for meeting the SDGs. Key to this effort are prioritising inclusive data, co-creating solutions with a broad range of stakeholders, and effective cross-sector collaboration.

Concluding this toolkit for a gender-sensitive approach to the Water-Energy-Food-Environment (WEFE) nexus in cities, Cities Alliance reaffirms its commitment to a transformative vision. The vision is to ensure that urban environments not only withstand climate challenges but also enhance resilience and opportunities for all inhabitants, with a particular focus on empowering women.

This toolkit advocates for a multi-level, multi-sectoral approach to overcome "silo-thinking" when addressing the interconnected issues of water, energy, food, and ecosystems. By integrating local, national, and regional policy levels, Cities Alliance aims to drive institutional change and capacity building through technological and environmental innovations.

107 The Mahila Housing Trust. https://www.mahilahousingtrust.org.

108 Tavenner, K. and T.A. Crane. 2019. "Beyond 'Women and Youth': Applying Intersectionality in Agricultural Research for Development." *Outlook on Agriculture,* 48(4), pp. 316–325. https://hdl.handle.net/10568/107145.

109 City of Cape Town. www.capetown.gov.za/thinkwater.

110 Fry, Carolyn. "Understanding Nairobi's Urban Agriculture Sector Helps to Enhance Equality and Climate Resilience," RUAF website. https://ruaf.org/2020/07/17/understanding-nairobis-urban-agriculture-sector-helps-to-enhance-equality-and-climate-resilience.

111 Raymond, C. M., N. Frantzeskaki, N. Kabisch, P. Berry, M. Breil, M.R. Nita, D. Geneletti, and C. Calfapietra. 2017. "A Framework for Assessing and Implementing the Co-Benefits of Nature-Based Solutions in Urban Areas." *Environmental Science & Policy,* vol. 77, pp. 15–24. https://doi.org/10.1016/j.envsci.2017.07.008.

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As Cities Alliance moves forward,

it remains committed to this comprehensive strategy, leveraging and applying the different tools to build more resilient, equitable, and sustainable cities.

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