CTCN GENDER MAINSTREAMING GUIDELINES FOR TECHNICAL ASSISTANCE IN NATIONAL SYSTEMS OF INNOVATION (NSI)

The CTCN Gender Policy and Action Plan (2023-2027) grounded in human rights principles, aligns with international frameworks like the UDHR, CEDAW, UNEP and the 2030 Agenda. It affirms equal rights for all people, regardless of gender or intersecting identities, to access, shape, and benefit from climate technologies. The policy upholds "do no harm" and "leave no one behind," promoting balanced participation of women and men in climate governance, innovation, and decision-making.

CTCN Gender Policy and Action Plan (GPAP) mandates gender integration across all stages of Technical Assistance (TA): gender must be addressed from the TA request phase and that all response plans should reflect gender co-benefits, allocate dedicated resources, and engage qualified gender expertise. This document supports CTCN TA specialists and implementing partners in operationalizing the CTCN GPAP (2023–2027) and aligning with the CTCN Programme of Work, particularly for TAs focused on National Systems of Innovation (NSI) enabler.

Gender Mainstreaming: The process of assessing the implications of any planned action, including legislation, policies, or programs, for women and men in all their diversity, all areas and at all levels. This ensures all women's and men's concerns and experiences are integral to designing, implementing, monitoring, and evaluating policies and programs in all political, economic, and societal spheres, promoting equal benefits and preventing inequality.

Gender Analysis: provides data, information and analysis to integrate gender perspectives into policies, programs, and projects. It is the starting point for gender mainstreaming and identifies the differences between and among women and men in terms of their social position and resource distribution in each context.

Intersectionality: Recognizes overlapping identities - gender, age, ethnicity, disability, location - that shape experiences of exclusion. Gender mainstreaming must account for these layered inequalities.

The NSI refer to the institutional, policy, and governance frameworks that shape how climate technologies are developed, transferred, and adopted. Effective NSI are central to meeting climate goals: they enable countries to innovate climate technologies, ensure policies align with local innovation capacity, and support socially inclusive transitions[1]. Gender responsiveness is paramount in climate innovation to ensure that both mitigation and adaptation innovations do not marginalize women and marginalized groups. Instead, they should empower these groups in technology creation, deployment, governance, and benefit sharing. Building on the key concepts outlined above, the following table highlights typical barriers to gender inclusion within innovation systems and suggests ways to address them in practice.

Table 1: Operationalizing Gender Mainstreaming in NSI: Typical Barriers and Mitigation Strategies

Barrier	*Example*	*How to address these barriers*
Innovation priorities neglect women's needs	E-mobility systems designed without considering women's travel patterns or safety.	Involve women users and CSOs in feasibility studies, consultations, and design processes.
Finance favors large firms and men over women innovators	Women farmers and waste pickers excluded from circular economy funds and agritech support.	Dedicate funding to women-led enterprises/cooperatives; apply gender-responsive eligibility criteria; strengthen the

[1] UNFCC, Strengthening National Systems of Innovation to Enhance Action on Climate Change, TEC Brief Nr. 7, 2015, https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/TEC_documents/5be1bf880cc34d52a4315206d54a711b/60d1580f741a4bc783da5a00cf64a879.pdf

		capacities of women, youth, etc. regarding STI in circular economy.
Technology transfer assumes equal capacity	Green building training targets engineers but excludes women small contractors and households.	Provide targeted training/mentorship for women SMEs, community actors, and households.
Governance lacks women's voices	Waste management policies shaped without women's input despite their central household role.	Require gender balance in NSI committees/working groups; engage women's CSOs and professional networks.
Data gaps hinder inclusion	E-mobility pilots track vehicles but not who benefits from these services, by gender or location.	Collect sex-disaggregated and intersectional data; adapt project design based on findings.

1. HOW TO MAINSTREAM GENDER THROUGHOUT THE TA CYCLE

A. At the request stage, governments and partners should reference preliminary gender considerations in the innovation system. These might include the low share of women students and researchers in STEM, unequal access for women entrepreneurs to green financing, safety and affordability concerns for women as users of technologies and services (e.g. e-mobility, appliances). Highlighting such gender related barriers at conceptualization ensures that gender-responsive approaches are embedded from the very start of the TA process.

B. The response plan should recognize gender as a cross-cutting requirement, reinforcing the need for **a qualified gender expert with a defined role and terms of reference**. Both National Partners (NPs) and Implementation Partners (IPs) are responsible for ensuring this expertise is engaged throughout the entire TA process. To operationalize this, the plan must earmark at least 5% of the total budget for gender-responsive activities. These preliminary allocations typically include gender expertise (covering the gender analysis), stakeholder consultations with women's groups and marginalized actors, and initial capacity-building measures. The response plan also actively promotes the participation of qualified female experts across all stages of implementation, ensuring women's leadership and visibility within the process. Furthermore, in the NSI context, such allocations could also, for instance, finance mentoring for women innovators in climate-technology incubators or ensure gender-responsive criteria in innovation-funding schemes. Detailed allocations will be refined once the gender analysis is completed and specific activities identified.

C. During implementation, the gender expert conducts a context-specific gender analysis to identify barriers and opportunities in the innovation system. This analysis should review national, regional, and global reports (e.g. CEDAW, UN Women, SDG Gender Snapshot, OECD SIGI, WEF Gender Gap), map relevant laws and policies, and use both qualitative and quantitative methods such as surveys, interviews, and focus groups. It must apply an intersectional lens (e.g., gender, age, disability, ethnicity, location) and consider the entire NSI ecosystem — from STEM education and research to entrepreneurship, finance, governance, and technology uptake.

The analysis will often reveal systemic barriers that block women and marginalized groups from full participation in climate innovation. A summary of common barriers and suggested mitigation strategies is provided in Table 1 to guide Implementing Partners in ensuring that no harm is done and no one is left behind.

Consultations with diverse stakeholders should validate the gender analysis and guide activity design. This must include women's organizations, youth, Indigenous peoples, and persons with disabilities, alongside government, academia, and private sector actors. Consultations should be held at times and in locations that are accessible and conducive to women's participation. Engagement should be continuous, ensuring underrepresented groups are not only consulted but actively involved in decision-making throughout the TA.

Findings from the gender analysis and stakeholder consultations must then shape all TA outcomes, outputs and activities. *[Output example "Circular economy strategy includes gender-responsive reforms to innovation funding" instead of "Circular economy strategy developed"]. [Activities examples: mentoring and training programs for women innovators and SMEs in sectors such as circular economy or e-mobility; sustained collaboration with women's organizations and marginalized groups in governance processes].*

The gender expert should remain actively involved throughout delivery to ensure these measures are implemented consistently and effectively.

D. **Monitoring, Evaluation and Learning (MEL)** should apply tools such as the GEF Gender Tag and UN Environment Gender Marker[2] and must go beyond sex-disaggregated participation data to capture systemic change in NSI. This includes tracking women's access to climate R&D and innovation finance, representation in governance bodies, and qualitative feedback on whether innovation systems are becoming more inclusive and equitable.

2. RISKS, RESISTANCES AND MITIGATION STRATEGIES

Despite careful planning, IPs often encounter recurring obstacles when trying to mainstream gender in NSI-related Technical Assistance. Drawing from CTCN experience, the following table summarizes some of the most common challenges and offers practical mitigation strategies that can be adapted to different country contexts.

Table 2: Examples of challenges encountered in gender mainstreaming and potential mitigation strategies

Challenge	Mitigation Strategy[3]
Gender included too late in the TA cycle.	Require gender reflections at request phase and a formal gender analysis at the start of implementation.
Women's participation limited by time and safety.	Schedule activities at convenient times (incl. weekends), use venues accessible by public transport, and ensure safe, inclusive spaces.
Few women in government bodies related to climate/innovation.	Require gender balance in TA-related committees/working groups; engage women's CSOs/professional networks to nominate female experts.
Implementing partners lack gender expertise.	Include gender capacity in selection criteria and ensure a dedicated gender expert is engaged throughout the TA.

[2] Guidance to Advance Gender Equality in GEF projects and programs, 2018
https://www.thegef.org/sites/default/files/publications/GEF%20Guidance%20on%20Gender.pdf
UN Environment, Gender and Environment: Support Kit For Un Environment Staff,
https://wedocs.unep.org/bitstream/handle/20.500.11822/25348/Gender_Environment_Kit.pdf?sequence=1&isAllowed=y

[3] This table outlines common risks encountered in mainstreaming gender within NSI Technical Assistance, together with proposed mitigation strategies. These mitigation strategies align with the CTCN Gender Policy and Action Plan (2023–2027) and should be applied systematically to ensure that all TA contributes to inclusive, equitable, and sustainable innovation systems.

No budget allocated for gender responsive activities.	Enforce minimum 5% allocation for gender-responsive activities; include general gender budget lines early in response planning.
Weak collaboration between IPs and NPs	Promote joint planning, ensure regular coordination, and involve the gender expert in all steps.
Low government engagement on gender equality.	Align TA activities with national commitments under regional or international instruments (e.g. Maputo Protocol, CEDAW, etc.); plan gender capacity building activities.

ANNEXES

Practical Example: Gender Mainstreaming in Implementation – The STI4CE Strategy (South Africa)

In some NSI-related TAs, such as the Circular Economy Science Technology and Innovation (STI4CE) Strategy in South Africa[4], gender mainstreaming was operationalized through the full integration of gender expertise in the TA team, women's leadership in project delivery, and the development of strategy components focused on addressing barriers for women in STI careers. Implementing Partners should adopt similar practices by embedding gender-responsive guidance in all outputs (e.g. policy roadmaps, innovation support mechanisms), ensuring equitable participation in training and consultations, and tracking not only who participates, but who benefits and who leads. Gender experts must remain actively involved during implementation to ensure that emerging activities (pilots, frameworks, innovation platforms) maintain alignment with gender equality principles.

Where to find sex-disaggregated indicators and gender data

The SDG List of Indicators (detailed indicators for all the SDG targets); UN Women: Women Count and Data Portal (link with SDG, challenges on gender data, country-level sex-disaggregated indicators and data); EIGE Gender statistics database (Numerous indicators on various topics, linked to Beijing Platform for Action, Gender Equality Index, etc.)

How TA Managers and Implementers can report gender outcomes

To align with the CTCN Gender Policy (2023–2027), TA managers and implementers should report gender outcomes using established frameworks such as the GEF Gender Tagging and, where feasible, the UN Environment Gender Marker Tool. **Reporting should combine quantitative and qualitative indicators and capture not only participation but also institutional and systemic change that is specific to NSI.**

At a minimum, TAs must report:

- Sex-disaggregated participation data, e.g. % of women in climate R&D, STEM training, innovation grant applications.
- Changes in access and outcomes, e.g. women-led enterprises accessing green financing; increased share of women researchers in leadership roles.

Institutional change can also be tracked by monitoring women's representation in NSI governance bodies, incubators, or standard-setting committees, and by documenting how policies and funding mechanisms evolve to reduce gender barriers.

- Policy and institutional shifts, e.g. integration of gender-responsive criteria in innovation funding schemes; reforms in STI policies to address gender barriers.

[4] https://www.circulareconomy.co.za

- Governance metrics, e.g. % of women in decision-making roles in NSI-related bodies (committees, incubators, councils).

Qualitative feedback, such as interviews with women innovators or focus groups with underrepresented communities, can complement quantitative data to show whether climate innovation systems are becoming more inclusive, accessible, and equitable.

Additional Definitions

Human Rights–Based Approach (HRBA): is a method that applies five key working principles to advance human rights for all: meaningful and inclusive participation and access to decision-making; non-discrimination and equality; accountability and the rule of law for all; transparency and access to information, supported by disaggregated data[5]. HRBA requires human rights principles (universality, indivisibility, equality and non-discrimination, participation, accountability) to guide United Nations development cooperation and focus on developing the capacities of both 'duty-bearers' to meet their obligations, and 'rights-holders' to claim their rights[6].

Gender-Transformative Approach (GTA): Targets root causes of inequality by shifting norms, power dynamics, and institutional structures. GTA goes beyond gender gaps, aiming to shift power relations, norms, and institutional structures perpetuating inequality[7].

Additional useful resources on gender analysis and mainstreaming, and regional gender frameworks

1. African Union, AU Strategy for Gender Equality & Women's Empowerment 2018-2028.
2. African Union, Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, 2003.
3. ASEAN, ASEAN Gender Mainstreaming Strategic Framework 2021–2025.
4. Council of Europe, Gender Equality Strategy 2024-2029.
5. ECLAC, Montevideo Strategy for Implementation of the Regional Gender Agenda within the Sustainable Development Framework by 2030, 2016.
6. EIGE, Gender Budgeting – Step by step toolkit, 2020.
7. ESCWA, Handbook on the Arab Gender Indicator Framework (AGIF23), 2024.
8. EU Gender Action Plan III, 2021.
9. OECD Social Institutions and Gender Index (SIGI).
10. OECD, Gender Equality and the Empowerment of Women and Girls: DAC Guidance for Development Partners, OECD Publishing, Paris.
11. OECD, Gender Equality in a Changing World Taking Stock and Moving Forward, 2025. (Section "Gender, the green transition and the digital transformation", page 273).
12. PARIS21 and UN Women, Gender Data Outlook 2024: Unlocking Capacity, Driving Change, 2024.
13. SADC (Southern African Development Community), Gender and Development Protocol, 2016.
14. Sustainable Development Goals (SDG) Report 2024.
15. UN Women and IANWGE, IANWGE compendium – 30 years after Beijing: Promising practices on gender mainstreaming in support of the Beijing Platform for Action's 12 critical areas of concern, 2025 (including a chapter on Women and Environment, etc.).
16. UN Women, Gender Analysis in Technical Areas: Climate and Disaster Risk Finance and Insurance, 2022.

[5] https://wikis.ec.europa.eu/spaces/ExactExternalWiki/pages/50108948/Human+Rights+Based+Approach
[6] https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach
[7] https://capacity4dev.europa.eu/library/gender-transformative-approaches-concept-note_en

17. UN Women, Gender Analysis in Technical Areas: Energy Infrastructure, 2022.
18. UN Women, Gender Mainstreaming, 2020.
19. UN Women, Mainstreaming gender equality in water resources management: Global status and 7 pathways to progress, 2025.
20. UN Women, Strengthening public finance management systems for gender equality and women's empowerment: Promising practices and remaining gaps, 2023.
21. UNESCO, Measuring Gender Equality in Science and Engineering: the SAGA Toolkit, 2017.
22. UNFCCC Gender Action Plan.