

Gender and DSI: A Brief Guide for Policy-makers

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In December 2022, during its fifteenth meeting, the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) agreed to establish a multilateral mechanism aiming to ensure fair and equitable benefit-sharing from the use of digital sequence information (DSI) on genetic resources. In addition to this, the COP initiated the Ad Hoc Open-ended Working Group on Benefit-sharing from the Use of DSI on Genetic Resources, tasked with the development and enhancement of this multilateral mechanism (CBD/COP/DEC/15/9). At the same time, benefit-sharing from the use of DSI has been integrated into the Kunming-Montreal Global Biodiversity Framework (KMGBF), specifically within Goal C and Target 13. This inclusion emphasises the significant role DSI plays in advancing global biodiversity objectives and ensuring that the benefits are fairly and equitably shared among all stakeholders and rightsholders.

With any new technology, humanity generates the need to balance prompt and informed decision-making on the applications, implications as well as the global governance of innovations. Any innovation with global impact, also bears the potential of intended and unintended consequences which may regenerate undesirable feedback loops. KMGBF is therefore built around the Theory of Change, stressing the need for an urgent policy action, through a whole-of-society approach, guided by the interconnectedness of ecological, economic, and social dimensions, promoting sustainable use, and fair and equitable sharing of benefits in order to prevent undesirable outcomes and to achieve the Convention's Vision of living in harmony with nature by 2050.

The Parties to the Convention have acknowledged the potential of DSI in achieving the objectives of the CBD, namely conservation of biodiversity, sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding. This policy brief focuses on how policy-makers can benefit from utilising the foundation of the KMGBF to achieve the objectives of the CBD through a gender-responsive design, mindful of the interconnectedness of all goals, to ensure full and effective participation of women in DSI development and governance.

DSI, CBD and Women

The contributions of women to the conservation of biological diversity have been long acknowledged by the CBD and its instruments. COP Decisions also repeat the need to address the gender-related gaps while implementing the CBD and its protocols. COP Decision X/19 underscores the importance of gender considerations in implementing the Nagoya Protocol, advocating for women's participation in benefit-sharing arrangements. Decision 15/9 calls for specific and targeted capacity-building and development, technology transfer, according to Article 16, and technical and scientific cooperation, according to Article 18 of the CBD while underlining the capacity needs and priorities of women. Additionally, KMGBF stresses that all goals and targets are interlinked, and that the successful implementation relies on integrating gender equity into all aspects of biodiversity conservation and

sustainable use. In that vein, policy-makers must consider all relevant gaps in gender equality when implementing KMGBF, designing the multilateral benefit-sharing mechanism as well as options for DSI governance.

Relevant Gaps

Many civilisations have significantly improved the systems around participation of women in decision-making and enabling women to hold effective roles amongst their societies. Nevertheless, today's statistics still require us to be mindful of system designs that continue to exclude women from decision-making and participation. Below is a bite-sized representation of the gaps in gender equality that affect DSI governance in the fields of decision-making, utilisation of DSI, conservation and sustainable use of biodiversity, as well as benefit-sharing.

Women in Policy and Decision-making

Today, only 10% of the heads of state are women (UN Women 2024). Whereas women only hold 22.8% of the ministerial positions around the world. While women seem to be slightly more effectively represented under ministerial positions on environment (32%), public administration (30%), and education (30%), men dominantly hold positions in ministries such as economy, defence, and justice. (UN Women 2023)

According to World Bank Report on Women, Business and the Law (2024), women today enjoy less than two thirds of the rights available to men. While the participation and legal rights are far more secure in OECD (Organisation for Economic Co-operation and Development) high-income countries (due to many recent legal reforms and planned actions), there still exists a large room for improvement.

Women in Science and Innovation

Women have increased their representation in science over the last decades. Nevertheless, there still exists a critical gap for women in science. According to the United Nations Educational, Scientific and Cultural Organization, women constitute a minority of the world's researchers: approximately one in three researchers are women (UNESCO 2024). Studies show that these numbers affect the scientific publications, level of seniority in scientific posts as well as the research funding received by women. (James 2021, Lavelle 2023)

Scientific innovation is also another area where women face significant challenges. In the Global Gender Gap in Innovation and Creativity (2023), World Intellectual Property Organisation (WIPO) reports that women inventors are behind only 23% of global patent applications. Biotechnology and pharmaceuticals are two of the fields where women inventors are more present with 30% of all patent applications.

Women in Biodiversity Conservation

Women are particularly underrepresented in biodiversity conservation and natural resource management. Scientific literature acknowledges the importance of integrating gender-responsive actions into these areas (Leisher et al 2016). Many studies show that more equitable representation of women leads to more equitable benefit-sharing and improved conservation outcomes (Upreti 2001, Vollan and Henry 2019). Yet, much of the structural dependencies around conservation and natural resource management prevent women from participating in decision-making (Agarwal 2010, Doubleday and Adams 2019, Lundberg 2018). This can be due to the lack of acknowledgement of traditional roles of women in agriculture, forestry, natural resource management, and women's lack of access to land tenure or ownership. Additionally, lack of access to information and reduced access to education compared to men have been found to create obstacles for women to meaningfully participate in decision-making in conservation projects. In some cases, research demonstrates women

have been found to spend more time than men in using and managing natural resources, yet the systemic barriers exclude them from receiving benefits. (Agarwal et al 2021, Alexander et al 2023, James et al 2021, UNHR 2017) Gender bias also affects women's careers in conservation organisations, as research shows that women tend to be hired for more administrative tasks rather than roles for which men are preferred such as leadership, risk-taking, and fieldwork. (James et al 2023, Jones and Solomon 2019)

Recommendations

Gender inequality affects everyone, in particular women and girls (UN Women 2017). Much has been achieved over the past decades on alleviating the structural dimensions of gender inequality, yet the literature and statistics presented above require policy-makers to continue working on implementing gender-responsive solutions in the form of concrete decisions and policies.

As any law and policy-making forum, neither the CBD nor the DSI-related decision-making are immune to these statistics. However, such statistics can only be improved by eliminating the root causes rather than looking at the numbers alone. The United Nations Educational, Scientific and Cultural Organization (UNESCO 2021) reports that in instances where they are consciously acknowledged and targeted through actions such as law, policy, and decision-making, the gaps are significantly reduced. Promoting women's participation in innovation and decision-making processes through implementing concrete action plans ensures that their needs and perspectives are sufficiently represented and addressed.

DSI introduces a novel technology that requires effective governance mechanisms with a whole-of-society approach. Below are some of the actions policy-makers can take to achieve the ends of KMGBF while staying true to the concerns reflected in DSI negotiations:

- **Gender-responsive policies:** Ensure that specific gender considerations are integrated into all aspects of DSI governance. Understanding the diversity of roles and perspectives men and women have in conserving biodiversity, as well as recognising the underrepresentation of women in science allows for a better design of DSI governance. Policies must be mindful of the gender inequalities in generating and utilising DSI for innovation, and conservation so as to involve the perspectives of both men and women in an open and systematic manner.
- **Capacity-building:** Develop strategic and targeted capacity-building programs that address the specific needs of women and marginalized groups. Policy-makers should ensure that the CBD's Long Term Strategic Capacity-building and Development (CBD/COP/DEC/15/8) as well as Gender Plan of Action (CBD/COP/DEC/15/11) are fully integrated into DSI capacity-building plans and programmes. Localised capacity-building programmes often rely on the technical and operational skills of local actors or international experts hired for local projects. Therefore, capacity-building programmes should begin with 'training the trainers' in locally adapted gender-sensitive approaches. This should be coupled with taking stock of the different needs, roles and priorities of men and women participating in the capacity-building programmes with the aim of capturing the capacity needs holistically. A good next step is to document the experiences of capacity-building in designing gender-sensitive capacity-building toolkits for future actors and experts. Without the strategic planning of capacity-building activities, DSI policies risk the inability to address the needs and priorities of women.
- **Participation:** Enable and ensure the participation of women in decision-making related to DSI and benefit-sharing. Gender-responsive planning of conservation projects and benefit-sharing arrangements, providing training for participation in negotiations, while remaining conscious of biases adhered to men and women in science, conservation and policymaking can result in more women meaningfully involved in decision-making in local, national and international decision-making processes.

- **Collaboration:** Foster collaboration between stakeholders and rightsholders, including governments, NGOs, indigenous peoples, and local communities, to enhance and ensure gender-responsive approaches in conservation and sustainable use of biodiversity. While governments hold the authority to implement laws and policies, NGOs have extensive experience working with indigenous and local women. NGOs' localised experiences regarding the challenges faced by marginalised groups can enable policymakers to be informed of the steps that need to be taken to alleviate the root causes.
- **Data-driven decision-making:** Gather gender-disaggregated data in the field of DSI, sustainable use, benefit-sharing and conservation, in order to inform more effective and equitable policies. Gender-disaggregated data measures socio-economic differences between men and women and is the first step to any gender-sensitive data analysis. A good regional example of this is the Gender Statistics Database of the European Institute for Gender Equality which enables access to gender-disaggregated data concerning women in men in decision-making, science, innovation, political participation as well as data on already existing gender-sensitive policies. Additionally, the database contains figures on economic benefits of gender equality through labour market and macroeconomic indicators. Without gender-disaggregated data, women and girls are effectively invisible since there is no evidence basis for evaluating gender-responsiveness in policies.

Much of these will be applicable for any future discussion related to governance of artificial intelligence under the CBD. Hopefully by then, gaps will be significantly reduced through targeted, clear gender-responsive policies and actions.

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