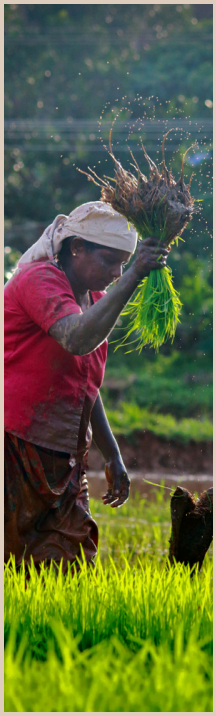
GENDER-RESPONSIVE BIODIVERSITY DATA

a practical handbook








iied International Institute for Environment and Development

CBD Women

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Contributors and peer-learning participants

At the heart of this handbook are the organisations and practitioners who participated in the peer-to-peer learning journey[1] and generously shared their methodologies, experiences, challenges and lessons.

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Wherever we present a particular methodology, tool, experience or case study, we have sought to attribute it directly to its contributor.

[1] https://padlet.com/cbdwomenscaucus/gender-biodiversity-data-75mbwd63smy6g6u

Editorial board

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Tree plantation alongside the roads through Cash for Work initiatives at Lalua Union, Bangladesh (Credit: CBD Women's Caucus)

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Foreword

Our evidence systems[2] are a matter of gender justice. Gender justice requires us to look beyond who is counted or represented to the inequalities and power relations that shape rights, resources and agency. Evidence systems are part of these power relations. As well as determining what we know, they shape whose knowledge counts, who gets to produce it and who has the power to use it.

Who decides what is worth measuring? Whose knowledge is recognised as credible evidence? Who collects and analyses the data? Who owns and controls the data? And, ultimately, whose priorities shape the decisions that evidence informs? These are not simply technical questions. They are questions of justice, about recognition, participation, rights, agency and power.

The Kunming-Montreal Global Biodiversity Framework (KM-GBF) recognises that achieving our collective biodiversity goals depends on actions and contributions across society. The same principle must extend to evidence: a whole-of-society approach to implementation requires a whole-of-society approach to evidence.

Women and girls, in all their diversity[3], including from Indigenous Peoples and from local and African descent communities, already generate knowledge about biodiversity change, what is working, who is contributing, who benefits, who bears the costs and where inequalities persist. The question, therefore, is not only how we capture that knowledge, but about whether we recognise it as evidence and the women and organisations producing it as knowledge partners, not just data sources.

This distinction is central for gender justice. We need to move beyond the call for more gender data. Of course we need better data. But gender justice cannot be achieved simply by counting women. It also requires asking whether women have the agency to shape the evidence itself, from the questions we ask and the knowledge we recognise, to how we interpret, govern and use evidence.

As the Convention on Biological Diversity's (CBD) global review takes stock of collective progress in implementing the KM-GBF[4], this becomes particularly important. What we understand as progress will inevitably depend on the evidence available and whose knowledge it represents. At a time when hard-won commitments on gender-responsiveness and the rights and participation of women and girls are increasingly contested in multilateral spaces, it is even more important that their knowledge, contributions and experiences are part of the evidence through which we understand progress.

[2] Evidence systems are the arrangements through which data and knowledge are generated, transformed into evidence across the data value chain to inform planning, monitoring, reporting, review and decision-making

[3] In this document, the term "in all their diversity" recognises the multiple and intersecting identities and characteristics that may shape people's experiences, including, among others, disability, race, ethnicity, Indigenous identity, African-descendant identity, pastoralist and local community identity, age, socioeconomic status, geographic location, gender identity and gender expression

[4] www.cbd.int/gbf/implementation/globalreview

This handbook contributes to this ambition. It aims to advance gender-just evidence systems that recognise diverse forms of knowledge, strengthen women's agency across the data cycle and ensure that their knowledge and contributions — and not just their vulnerabilities — can meaningfully inform biodiversity policy and action.

In many ways, the way in which this handbook came into being reflects this ambition, recognising women and communities as knowledge holders, evidence producers and partners in shaping salient, credible and legitimate evidence that informs biodiversity action.



Participatory mapping to identify what women know, use and manage in the marine-coastal zone, Guatemala
See Box 8 and Box 21

Introduction

Women and girls, in all their diversity — including from Indigenous Peoples and from local and African descent communities— hold extensive knowledge about biodiversity and are already generating valuable evidence to effectively advance gender-responsive implementation[5] of the Kunming-Montreal Global Biodiversity Framework (KM-GBF). Their knowledge can provide important insights into biodiversity change, differentiated impacts of biodiversity loss, effective conservation practices and women's contributions to biodiversity conservation.

Yet this knowledge and evidence are often insufficiently recognised or incorporated into formal biodiversity planning, monitoring and reporting at subnational, national and global levels. So, the challenge is not only to generate more biodiversity data but also to ensure that all actors involved in producing, managing and using those data make them gender-responsive and to strengthen the recognition, quality, accessibility and use of data generated by women-led and community-based organisations (CBOs).

This is a concrete implementation priority under the Convention on Biological Diversity (CBD). Target 23 of the KM-GBF calls for a gender-responsive approach to implementation, while the CBD Gender Plan of Action (2023-2030)[6] includes objectives to strengthen capacity to produce and use gender and biodiversity data, build the evidence base on gender-differentiated impacts and women's contributions, and strengthen gender-responsive monitoring and reporting. The first global review of KM-GBF implementation and the 2026 mid-term review of the Gender Plan of Action provide important opportunities to assess progress and evidence gaps.

This handbook has been developed as part of the joint Advancing Gender Justice in Biodiversity data and policy initiative[7], a collaboration between the CBD Women's Caucus and IIED that seeks to support women's organisations to generate and use gender-responsive data to influence biodiversity policy and action. The handbook is also relevant to the wider range of actors involved in producing, managing and using biodiversity data and evidence.

[5] Ajit, S, Arreguín-Prado, A, El-Aaraby, F, Wong-Pérez, K, Booker, F and Cimmino, C (2026) Findings report: advancing gender justice in biodiversity data and policy. CBD Women's Caucus and IIED.
[6] CBD (2022) Decision adopted by the Conference of the Parties to the Convention on Biological Diversity: 15/11. Gender Plan of Action. CBD/COP/DEC/15/11.
[7] CBD Women's Caucus. Advancing gender justice in biodiversity data and policy https://cbdwomenscaucus.org/initiatives/gender-and-biodiversity-data/

Developing the handbook

The handbook builds directly on a peer-to-peer learning journey involving women's organisations, civil society organisations (CSOs) and other practitioners working at the intersection of gender and biodiversity.[8] The learning journey brought together experiences, perspectives and approaches from disciplines, sectors and geographical contexts across the data value chain — from data collection to data management, data use and communication (see Figure 1).

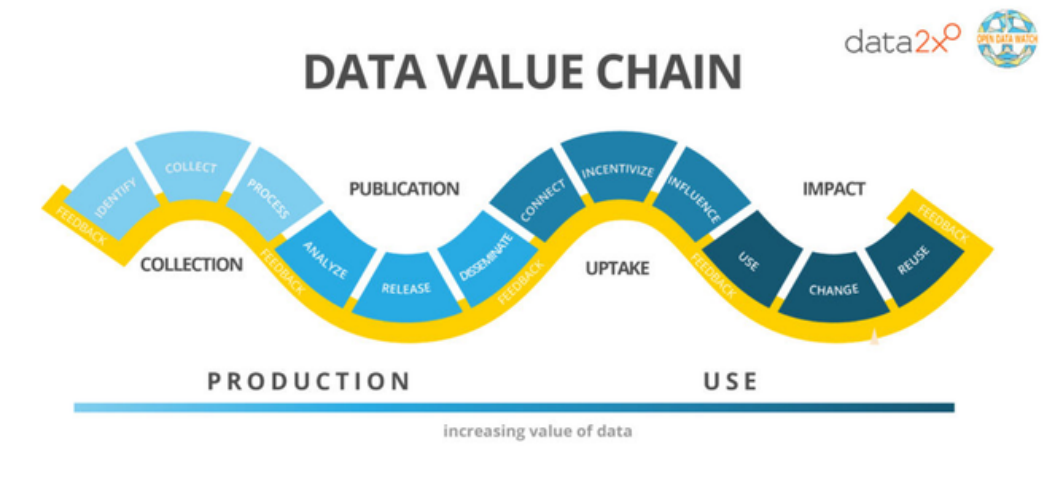


Figure 1. The data value chain
Source: Data2X and Open Data Watch (2018) The data value chain: moving from production to impact.

The methodologies, approaches and case studies featured in this handbook draw from the experiences and contributions of participants in this learning journey. The editors have curated these contributions while preserving the diversity of perspectives and experiences from which they emerge.

A gender justice approach to biodiversity data

The handbook reflects an understanding that strengthening gender-responsive data is both a technical and a justice issue. The processes through which we generate, analyse, interpret and use data are not neutral; rather, they shape whose knowledge and experiences become visible. So, to address gaps in gender-responsive biodiversity data, we need more than improved methodologies and tools; we also need to consider the power relations that determine who participates in knowledge production, whose knowledge we recognise and value, who makes decisions about data and who benefits from their use.

This handbook recognises women in all their diversity not only as subjects of data, but also as rightsholders, knowledge holders and producers of evidence. It explores questions of participation, recognition, ownership, agency and power across the data value chain — which underpin the ethical considerations and approaches presented throughout the handbook.

[8] IIED. Call for expressions of interest: peer learning series on gender and biodiversity data. www.iied.org/call-for-expressions-interest-peer-learning-series-gender-biodiversity-data

The purpose of this handbook is not only to strengthen the production of data, but to strengthen organisations' and communities' abilities to move from data to evidence, communication, advocacy and influence. It aims to provide a practical and accessible resource for organisations and practitioners seeking to generate, manage, analyse, communicate and use gender-responsive biodiversity data, presenting guiding principles and a range of tools, methodologies, case studies and practical examples that users can adapt to their own objectives, communities and contexts.

Who is the handbook for?

We do not expect the users of this handbook to be data specialists. Rather, it is designed for people with different levels of technical experience. It is primarily intended for women-led organisations and movements, Indigenous People's organisations, local organisations, CBOs, CSOs and practitioners working on gender and biodiversity. It may be particularly useful for organisations that already collect information or document community knowledge but would like to strengthen their methodologies, analysis, data management, communication or ability to use evidence strategically to advance gender-responsive biodiversity policy and action.

The handbook may also be useful to researchers, networks, advocacy organisations, nongovernmental organisations, funders and other institutions that work with or support community-generated biodiversity data. More broadly, it is relevant to all actors involved in producing, commissioning, managing or using biodiversity data, who share responsibility for ensuring that such data are gender responsive.

How to use the handbook

The handbook is designed as a practical resource you can dip in and out of, rather than a document you should read from beginning to end. You can enter it at different points, depending on where you are in your work.

If you are beginning a new initiative, you might wish to start with the sections on understanding gender and biodiversity data and guiding principles for ethical gender and biodiversity data to help clarify the purpose of your work, identify who should participate and which ethical issues to consider and select appropriate approaches.

If you are looking for a particular tool or method, go directly to the guidance on data collection, data management and data use and communication. But the tools and approaches laid out here are not intended as fixed exercises. Rather, we encourage you to select, combine and adapt them to your own context.

Throughout the data value chain, we encourage you to return to the ethical considerations and guiding principles and ask the following questions. Who is participating? Whose knowledge is represented? Who might be excluded? Who owns and controls the data? Who decides how they can be used? Could collecting or sharing this information cause harm? Is the evidence accessible to the people who contributed to it? And how can the process strengthen rather than extract from women's and communities' knowledge?

Understanding gender and biodiversity data

Gender-responsive biodiversity data are essential for understanding who is affected by biodiversity loss and conservation measures, who contributes to the conservation and sustainable use of biodiversity, and whether policies and actions are delivering equitable outcomes. By making visible the differentiated roles, knowledge, experiences and priorities of women and gender-diverse people, such data can provide an evidence base for designing, implementing and monitoring measures that respond to these realities. This is particularly important for tracking progress on the KM-GBF gender commitments[9] and for ensuring that gender considerations are integrated into national biodiversity planning, implementation and reporting.

Gender-responsive biodiversity data go beyond sex-disaggregated data. While disaggregation is essential for identifying differences and inequalities, gender-responsive data can also capture gendered roles and responsibilities, rights and access to and control over resources, knowledge and practices, participation and decision making, differentiated impacts, contributions and the power relations that shape biodiversity governance and outcomes.

Yet significant gaps remain in the availability and use of such data. The midterm review of the CBD Gender Plan of Action highlights that gender-disaggregated data — specifically data linking gender and biodiversity — remains insufficient, fragmented or unavailable at national level in many contexts.[10] This limits the ability to monitor progress or design measures that lead to evidence-based implementation. The review also identifies a lack of institutional capacity, adequate resources and coordination among the actors involved in generating, managing and regulating data as key obstacles that affect the availability of data, its quality, accessibility and ability to inform policy and decision making.

These challenges are not only technical; they also raise questions of gender justice. Data processes are not neutral: decisions about what information is collected, whose knowledge is recognised, who participates in producing and interpreting data, and who controls its use all shape which experiences, contributions and priorities become visible in biodiversity policy. Women should therefore not simply become more visible as subjects within existing data systems; they must also be recognised as rightsholders, knowledge holders and producers of evidence, with agency in shaping what information matters and how it is collected, interpreted, communicated and used.

At the same time, gaps in formal biodiversity data systems do not mean that gender-responsive evidence is not being generated. Relevant evidence can exist beyond official data systems, including through women-led and community-generated data and knowledge. As part of the broader process of advancing gender justice in biodiversity policy, the CBD Women's Caucus and IIED undertook a baseline to develop an understanding of the capacity needs and opportunities within women's organisations working with biodiversity data.[11]

[9] www.cbd.int/gender/action-plan
[10] CBD (2025) Midterm review of the implementation of the Gender Plan of Action 2023–2030. CBD/SBI/6/5.
[11] Ajit, S, Arreguín-Prado, A, El-Aaraby, F, Wong-Pérez, K, Booker, F and Cimmino, C (2026) Findings report: advancing gender justice in biodiversity data and policy. CBD Women's Caucus and IIED.

The findings demonstrated that women-led organisations and CBOs are already generating and using gender-responsive biodiversity data, particularly to support local decision making and advocacy. But weak data management systems, limited resources and restricted access to policy spaces continue to constrain the sustainability, protection and influence of this evidence, especially at national and global levels.

The baseline used the data value chain to examine these realities across different stages of working with data, from identifying information needs to generating and collecting the data, managing and analysing those data, through to using and communicating them. This approach helped identify where women's organisations already have capacities and established practices, as well as where gaps in resources, skills, systems and access limit their ability to sustain and influence their work. It also brings attention to what happens to community-generated evidence after it is produced: whether it is managed and protected, who has access to it, how it is interpreted and whether it reaches the policy spaces where biodiversity decisions are made.

Using the data value chain in this way shifts the focus from simply asking whether gender and biodiversity data exist to examining the conditions that determine whether data can generate policy influence. Strengthening gender-responsive biodiversity data therefore requires not only filling data gaps, but ensuring actors across biodiversity data systems integrate gender-responsive approaches into data production, management, analysis and use; investing in the organisations and systems that are already generating evidence; strengthening capacities across the data value chain; and creating meaningful pathways for women-led and community-generated evidence to be recognised and inform biodiversity planning, monitoring, reporting and decision making at national, regional and global levels.



Dorstenia contrajerva, Yucatán, México
(Credit: Ana J Cabrera Pacheco)
See Box 5 and Box 19

Box 1. Kinds of gender and biodiversity data

Gender-responsive biodiversity data are not simply data about women or data disaggregated by sex or gender. Gender can be considered in several dimensions of biodiversity data, as outlined here.

- **Who shapes and produces the data?** Consider who defines the questions and priorities, chooses what counts as relevant evidence, collects and analyses the data, and interprets the findings. Women and other knowledge holders should have opportunities to shape these processes, not only participate as respondents.
- **Whose realities are represented?** Consider whose knowledge, experiences, practices and perspectives are captured, and whose may be missing. Where relevant, data should be disaggregated by sex or gender and other characteristics to reveal differences between and within groups.
- **What does the data tell us about gender and biodiversity?** Data can examine gendered roles and responsibilities; knowledge and practices; rights, access to and control over resources; participation and decision making; differentiated impacts of biodiversity loss and conservation action; contributions to biodiversity conservation and sustainable use; and the power relations that shape these outcomes.

Looking across these dimensions helps ensure that gender is considered not only in **who appears in the data**, but also in **who produces the data** and **what the data make visible.**

Box 2. Defining terms: methodology, method and tool

A **methodology** describes **what** was done during a research or assessment process, as well as **how** and **why**. This includes a description of all the methods and tools used to collect and analyse information and the reasons for their selection. It is important to explain a methodology clearly as this helps the audience understand what was done, how it was done and why it was done.

A **method** refers to a data gathering, analysis or use and communication activity.

A **tool** refers to a data gathering, analysis or use and communication instrument.

This handbook presents a range of methods and tools that are organised according to the family or grouping they belong to. But it is worth underlining that in practice, organisations often combine methods and tools to strengthen their methodology and better understand and represent the complexity of their local communities.

There is no single ‘best’ method or tool: selection should be guided by the purpose and questions of the initiative, the type of evidence needed, the context and participants, available capacities and resources, and ethical considerations. Combining methods can also enable triangulation and provide a fuller understanding of complex gender and biodiversity realities.

Guiding principles for ethical gender and biodiversity data

All gender and biodiversity data collection, analysis, use and communication must be ethical. This means respecting the rights, wellbeing and dignity of the people involved. The key guiding principles of ethical practice for gender and biodiversity data outlined here apply to all actors involved in producing, managing, analysing, communicating or using gender and biodiversity data.

Free, prior and informed consent (FPIC) refers to the right of Indigenous Peoples and local communities to freely decide whether to participate in data collection, analysis, use and communication. FPIC begins before data are collected and only after Indigenous Peoples and local communities receive full, clear and honest information about the purpose, methods and potential impacts. It is important to underline that Indigenous Peoples and local communities can withdraw informed consent at any stage.

'Do no harm' is the fundamental obligation mandating that any data collection, analysis, use and communication must avoid and minimise risks to participants rights, wellbeing and dignity. 'Do good' refers to maximising the benefits from gender and biodiversity data collection, analysis, use and communication to participants, their local communities and possibly others in similar situations/contexts.

Respecting rights is about upholding the existing legal and human rights of all participants and their communities. This includes ensuring the findings do not violate or undermine those rights, and where possible, actively contribute to their ability to exercise and benefit from their rights.

I**ntersectionality** recognises that people's experiences are shaped by multiple aspects of their identity — such as gender, age, (dis)ability, ethnicity, race, religion — and that data collection, analysis, use and communication pays attention to diversity within groups, including the most marginalised.

Confidentiality requires data managers or hosts to protect any identifiable information that could lead people outside of the manager/host organisation or network to recognise a participant. One practical step is to anonymise data by removing identifiable information, such as names, ages and specific location data.

Data sovereignty refers to the right of local community and women's organisations and the people they represent to own and control data collected about themselves including their knowledge, perspectives and experiences.

Accessibility means ensuring findings are used and communicated in formats that are meaningful for the people and communities involved in, and affected by, the data.

Safeguarding is about ensuring the individuals facilitating data collection, analysis, use and communication are safe from physical and emotional harm — and where harm occurs, receive adequate support to recover.

Protection measures should consider both collective and individual factors, short- and long-term risks, and the circumstances of those at risk, including women in rural or remote communities, women from Indigenous Peoples and from local and African descent communities and gender-diverse people. A project should consider protection from the outset, integrating it into decisions about how data are collected, stored, analysed, shared and communicated. This includes asking who has access to the data, when and why information is made public, how it is shared and who could be placed at risk by making it accessible. Protection measures should be holistic, addressing physical security, emergency contacts, psychosocial support and legal preparedness, including awareness of rights, access to legal assistance and documenting threats where appropriate. Protection should be community driven, ensuring that communities understand what the data project involves and do not experience it as an act of betrayal or outside interference. It should also consider gender-specific forms of harm, including sexual harassment, attacks on women's morality or fidelity, threats against women's children and economic sanctions such as denial of income or employment opportunities. An intersectional approach is also essential, recognising that Indigenous women, women with disabilities, female household heads and migrant women may face cumulative and differentiated risks requiring tailored responses.

Accountability and responsible use means being transparent about how data will be used, who will have access to them and why; using the data only in ways that are consistent with consent and agreed purposes; communicating findings back to contributors where appropriate; and providing ways to raise concerns or seek remedy where commitments are not respected.

A note about using artificial intelligence (AI)

Accountability and responsible use also apply when using AI or other automated tools in relation to gender and biodiversity data. As AI becomes increasingly integrated into work with data, it can improve access to information and reduce the time required for some tasks, but poorly used AI can compromise data integrity and put vulnerable populations at greater risk.

When considering the use of AI, discuss its use with communities and establish shared goals, tools and methods where appropriate. Assess which tasks AI may assist with — such as brainstorming, preparing initial drafts or supporting translation — and which should remain under human and community control, such as developing the final evidence base, drafting consent forms or representing a community's views and interests. If you decide to use AI, follow these basic guidelines:

- Do not assume AI-generated outputs are accurate. Independently verifying statistics, citations, quotations and other factual claims generated by AI is vital before using or publishing them.
- Be transparent, informing audiences and partners, where relevant, about the extent to which AI contributed to the production of outputs.
- Pay particular attention to the ways AI can reproduce or reinforce gender stereotypes, biases and harmful representations — review all AI-generated text and images for the erasure or caricature of women, Indigenous Peoples and local communities. Consider whether women are represented as knowledge holders and decision makers rather than solely as victims, and whether Indigenous and local names, species, practices and knowledge are represented accurately and respectfully rather than through generic or stereotyped representations.
- Never upload sensitive personal identifiable, culturally sensitive or location-specific information to external AI services, given the potential implications for privacy, consent, data ownership and sovereignty.

These guiding principles are not an exhaustive list, and there may be others relevant to your context. The most important consideration is to define any ethical guiding principles before you start collecting data and uphold them throughout the collection, analysis, use and communication stages.

Data collection

Data collection is the first stage in the data value chain, where information and evidence are generated. The method or combination of methods you select will depend on what you want to understand, whose knowledge and experiences you need to represent, the context in which you are working and the resources you have available.

The approaches presented in this section offer different ways of generating gender-responsive biodiversity data, from observation, storytelling and interviews to surveys, participatory mapping and community monitoring. Whatever methods you use, it is important to pay attention to who participates, whose knowledge you capture or miss, and whether the process enables women and other groups whose perspectives are often overlooked to contribute safely and meaningfully.

Observation

Observation means watching, listening and writing down what people do: where, when, with whom, and what it means (in this case) for the biodiversity and environment around them. A survey or an interview tells you what people say they do; **observation shows you what happens**. That difference matters for gender and biodiversity data, because much of what women, Indigenous Peoples and other community members know about nature is practical, seasonal and so routine that they may not think to mention it. A woman might not call herself a manager of agricultural biodiversity; but spend a season watching her choose and store seed, gather firewood, weed a home garden, fish a tidal channel or judge water quality by taste, and you will have documented real expertise that a questionnaire would have missed.

Observation also shows you **what is not said**: who speaks and who stays quiet in a village meeting, which places women can go and at what times, whose work gets counted as work, and the gap between what people say the rules are and what actually happens. Because it takes time and depends on judgement, observation is usually used alongside other methods. It can help you develop the questions to ask in interviews and provides the context that makes survey numbers make sense.

Observation is not a single technique. Rather, it is a family of techniques (see Table 1), differing in the level of observer participation and how much is decided in advance about what to record.

Table 1. Observation techniques

Type	Description	Notes
Participant observation	Spending a long stretch of time living and working alongside people, joining in daily life while keeping careful notes	The main method of ethnography and the best way to understand practice from the inside
Direct observation	Watching without joining in	Suits one-off events like a market day, a fish landing or a village meeting
Structured observation	Uses a checklist or a set routine — eg noting what each household member is doing at moments throughout the day	Produces numbers you can compare, which is powerful for showing how much unpaid work women do
Open Observation	Writing down what you see without a fixed list, then looking for the themes	Useful for spotting unexpected patterns, interactions and differences that a checklist might miss

In participatory forms of observation, community members do the observing themselves: walking a landscape and describing how it has changed, keeping photo diaries or running community monitoring where trained local observers record species, catch sizes, water quality or land clearing over months and years.

Whichever technique you use, it is important that people know who you are and why you are there. The following three habits make observation trustworthy:

- **Write your notes up the same day.** Jot down key points as you go, then expand them into full notes that very day, as details are quickly forgotten.
- **Be honest about who you are.** Your gender, age, language, background and status decide which doors open and which stay shut. Write that down as part of the record.
- **Check what you saw against other sources.** Compare your observations with interviews and documents; and most importantly, take them back to the community and ask whether you have understood correctly.

Making observation gender responsive comes down to a few deliberate choices. **Who observes** decides what can be seen: in many places, a researcher's gender simply closes off certain spaces, conversations and times of day, so mixed or same-gender teams may be the only way to reach women's knowledge and practice. **When and where you observe** matters just as much: the water points, kitchen gardens, forest edges and tidal flats women use, at the hours they use them, often fall outside a standard fieldwork schedule. It is also important to be deliberate about **what counts as data**, so you record care work, water and firewood collection, seed keeping and food processing as biodiversity-related, rather than background, work. Treat consent as ongoing rather than something given once, and before you start, think through the risk that being observed could expose people to — for example, it could draw attention to women who talk to outsiders.

Box 3. Participant observation in a shrimp-farming landscape in Bangladesh

Contributed by: Rizwan Azam Raiyan (Bangladesh)

Raiyan spent eight months living in a community in Bagerhat district on Bangladesh's southwest coast. Due to rising salt levels and shrinking freshwater and farming systems, families here have had to rebuild their livelihoods around a changed landscape over recent decades, digging out and flooding farmland to create ghers: embanked ponds for raising shrimp in brackish water.

Wanting to **avoid the easy answer that climate change caused all of this**, Raiyan **used long-term observation** to show how local political decisions, government action and the money in shrimp shaped what happened. He entered the community through people he already knew, including family members working in the shrimp industry, which gained him trust and an inside view of how the gher economy works day to day.

Participant observation was the anchor, but it could not have carried the study alone. Observation showed him what happens now: who works where, who fetches what, how a day is organised. It could not show him a generation of creeping salt; so in-depth interviews and older residents' oral accounts supplied the historical memory, focus group discussions (FGDs) tested whether what he had seen in a few households held more widely and case studies followed particular families in depth.

About 80% of the people in the study were women, because the costs of rising salt fall on them in particular ways. They collect the household's drinking water, often walking long distances every day, they work for hours in salty water and carry the health effects, and as local livelihoods shrink, more women are moving to the Mongla export processing zone for garment and machine-operator jobs. For Raiyan, the **most useful part of the method was recognising a limit he could not cross**. As a man, he could not have honest conversations with women about women's health or the rules that govern where women shelter during a cyclone. But rather than leave that as a gap, he asked two or three women community leaders to work with him as facilitators and data collectors. They took those questions into women-only spaces and brought back accounts he could not have gathered on his own. Consent was granted verbally, with real names replaced by pseudonyms in everything written.

This approach would work in any community facing fast ecological change: riverbank erosion areas, farming areas turning to drought and places affected by large-scale mining or extraction.

Box 4. Observing a ritual to see what a survey would miss in Cameroon

Contributed by: Medjiwa Kamga Simoni (Support Centre for Evaluation and Development, CAED, member of EvalIndigenous)

Simoni wanted to know why five heritage crops, including yellow yam, ancient taro and local onion, were vanishing from Bafou North, an area in the western highlands of Cameroon that had shifted from family polyculture to commercial market gardening. Rather than begin with a questionnaire, she chose to observe a ritual — the sie rite, a public ceremony to celebrate twins, in which food practices are openly performed and negotiated — so she could watch real decisions being made rather than ask people abstract questions about what they value.

She observed three households. One belonged to a notable[12] community leader and two were ordinary households, celebrating an adult woman twin and an adult man. Yellow yam appeared only in the leader's ceremony; ancient taro appeared in two; and local melon, in all three, showing that substitution starts in the poorer households. Observing only the high-status ceremony, which is the one visitors are most likely to be invited to, would have missed this trend entirely.

During the ceremonies, Simoni used **a short written checklist organised by moment**, making it repeatable elsewhere. Before the ceremony, she noted the host's status and urban connections. During the preparations, she identified who cooked —whether they were older or younger, local or visiting, women or men — whether they used traditional species or substitutes, who made these decisions and how long the cooking took. During the serving, she noted whether men and women ate separately, and which species were never substituted. Afterwards, she recorded what elders and women said about it and whether the household still grew the old species. She spent two days observing each household, day and night, because the decisions became visible during the preparations rather than at the table.

The checklist recorded gendered decision making, not just the species used. She found that elders defended ancient taro because two to four hours of cooking and pounding is itself a mark of respect; women and younger people defended the faster substitute because they are already working commercial crops almost year-round. Separate FGDs with older men, older women and young people allowed participants to state each of those positions without the others being in the room.

She got permission for the study from the traditional authorities, neither filmed nor photographed sacred dances of the twins, and worked alone with just a Yemba-language translator, because knowledge of the rite passes within a closed community system and it was easier for the community to build trust with a single person than a team.

The observation was coupled with a household survey (see Box 6), in which 44% of households said they still grew ancient taro, while the ceremonies showed it had quietly been replaced with other species. **Production data alone could not have revealed that the crop has been replaced, while observing the ceremony alone could not have revealed the numerical trend.**

[12] The term notable is used here to refer to a person of recognised social standing within the community.

Storytelling and testimonies

Storytelling means inviting someone to give an account in their own words, in their own order, with their own beginning and end. It sits close to interviewing, and a single session often moves between the two. The difference is that in an interview, you set the questions and receive the pieces you asked for; **in storytelling, you offer a prompt, let the person tell the story, and then you collect the whole account**. Prompts work best when they are indirect — for example, "tell me about a plant your mother taught you to use" works better than "list the species in your garden".

There are several storytelling methods. Collecting **a life history** or **oral history** of a place usually takes place one to one. In a **story circle**, a group takes turns and each account sparks the next. **Most significant change** involves people telling what changed most for them and then deciding together which of those stories matters most, so the choosing also becomes data. In **digital storytelling**, participants record and edit their own short audio or video and keep control of the result. Stories can also be **prompted** by a photograph, a seed or a walk through a place, or gathered where they already exist — in songs, proverbs and place names.

A **testimony** is a related form with a different purpose. It is a first-person account of harm, displacement, struggle over land or water and other factors, given deliberately and for the record. Testimonies are usually for an audience beyond the community and often given by someone who wants their name attached rather than removed. The Latin American tradition of *testimonio* is a well-known version. Because a testimony is offered in order to change something, it carries obligations that an ordinary story does not: the teller needs to know exactly where their words will be used, who will hear them and what protection, if any, exists if the account provokes a response.

Storytelling matters for gender and biodiversity data because much **biodiversity knowledge is held as narrative rather than as categories**. A woman may have no answer to "how many species do you use?" but a long answer to "tell me about the tree your grandmother planted". Inside that account are species names, seasons, planting and storage methods, food and medicinal uses, who taught her, who may use the plant and who may not, and how all of this has changed over time. A survey misses or flattens most of that detail. Stories are also good at **explaining changes over time**: what a forest looked like, what a catch used to be, which plants stopped appearing and roughly when — a long baseline that rarely exists in written records. Stories work as evidence when data are used for advocacy: a chart shows that something is happening, a story shows why it matters and to whom. Stories do not replace counting; rather, the two complement each other.

Making storytelling gender responsive is mostly about **who is invited to tell, where, what and on whose terms**. Women may say very little in a mixed group and a great deal in a women-only group, or one to one, so separate rather than mixed spaces can create fertile grounds for women's stories. Ask in the teller's language and record local names as they are given. Fit the time and place around women's work: some of the best sessions happen while walking in a garden or sorting seed, because the surroundings do half the prompting. **Choose prompts that women relate to** — about food, medicine, seeds, water and care — rather than focusing only on activities that are classified as production. Make a point of hearing older and younger women, women without land and women who are marginal within the community. And **treat what a woman says about a plant as knowledge in its own right**, not as colour to illustrate someone else's technical account.

Stories carry more ethical weight than most other data because **they identify people**. Changing a name does little when an account of a particular event is recognisable to everyone in a small community, so think about identification at the level of detail.

Consent should cover the recording, use and audience, and be revisited when a story is used somewhere new. The story belongs to the person who told it: agree what you can use and in what form, take transcripts back for approval and remember that some tellers want to be named and credited, since assuming anonymity can quietly erase them. Take care with accounts of conflict, land being taken or rule-breaking, which can put a teller at real risk; do not press for painful stories, and plan what to do if distress surfaces. Note that transcribing and translating stories takes far longer than collecting them, so budget for it, and for **returning something to the community** from the data you have gathered.

Box 5. From surveys to stories: Mayan women's home gardens in Mexico

Contributed by: Ana J Cabrera Pacheco (El Colegio de la Frontera Sur [Ecosur])

In 11 Mayan communities across the Yucatán Peninsula, **a species checklist turned into a storytelling session, and the stories proved to be the better data**. Cabrera Pacheco ran the exercise during a one-year postdoctoral project on food sovereignty in biocultural territories, funded by Mexico's national council of science and technology, CONACYT, and hosted at El Colegio de la Frontera Sur, working with Maya women who tend their own *solares*, the home gardens that form part of the wider traditional shifting cultivation *milpa* system. She arranged meetings through community organisations the women already knew and trusted.

The species checklist came out of a problem Cabrera Pacheco had encountered before. Asked directly what grew in their plots, families would name a handful of species and answer yes or no to anything else she pointed at. To better engage women, she built a list of vegetables, fruit trees, herbs, timber species and medicinal plants first, from specialist local literature, as an icebreaker.

But the data collection process did not remain a simple species checklist for long. Harvest had passed, and the women wanted to be sure they were being asked what they *usually* plant rather than what happened to be growing that week. In correcting the question, they began to talk, about how they sow specific plants, how much water the plants need, what meals they go into, when they have served as medicine, which family members like them and so on. They also added species — particularly medicinal plants — the list had missed.

The two methods worked together because each did what the other could not. The list gave the conversation a shape and a starting point, and made sure nothing obvious was forgotten; the stories supplied the depth, the local names, the seasonal detail and the species no list had thought to include. Cabrera Pacheco considered that if she were to do it again, she would run the exercise while walking through the *solares* so she could photograph and identify the plants as the women told the story. This would ensure survey, story and observation would reinforce one another.

What made the approach gender-responsive was that it treated women as the experts. Cabrera Pacheco positioned Maya women as holders of agrobiodiversity knowledge rather than respondents reporting on a household's crops, and storytelling made that real, setting the level of detail and bringing in medicinal plants, a body of largely women's knowledge that agricultural surveys rarely capture. She treated consent as continuous rather than settled at the first meeting and used pseudonyms throughout. The result was a set of agrobiodiversity lists grounded in women's own accounts; an approach that could travel to agroecosystems in Indigenous territories anywhere a species list can open a conversation.

Surveys

A survey asks the same questions, in the same way, to a defined group of people, allowing you to count and compare answers. Most surveys use **a structured questionnaire** built mainly from closed questions: yes or no, pick from a list or a scale running from strongly agree to strongly disagree. They may also include a few open questions. Some questions are read out by an enumerator, some are filled in by the respondent and many are now collected on phones or tablets using free tools such as KoboToolbox or ODK, which work offline and remove the step of typing paper forms into a computer afterwards. Two important decisions shape what the survey can tell you. The first is **who you ask**: a random sample supports statements about a whole population, while a purposive sample of, say, women fishers supports statements only about women fishers. The second is **what you ask**, because a survey finds only what its questions look for. Always test the questionnaire on a few people first, to identify questions that do not work or need improvement.

Surveys produce the numbers that budgets and policies are built on, which is why their blind spots are expensive. If a questionnaire never asks who collects firewood, who saves seed or who decides what is planted, the dataset may describe a landscape with no women in it. **Disaggregating every relevant answer by gender is the minimum**, and where an answer cannot be disaggregated, that gap is a finding worth reporting. Surveys can turn something visible in one village into something countable across a district, which matters when the aim is to influence a national biodiversity strategy and action plan (NBSAP) or national report. Their limit is depth. A survey can establish that most of a heritage crop is grown for the household rather than for sale; but it cannot easily explain why that crop has vanished from ceremonies. That is why surveys usually work best alongside a method that explains the numbers.

Several deliberate choices determine whether a survey gives visibility to women's lives and priorities. The first is who you interview. One interview per household with whoever is put forward as the household head invariably produces men's accounts of women's work. It is better to ask women directly about their own activities so, rather than just interviewing the (often male) household head, if you can, interview a woman and a man from the same household separately. The second is who does the interviewing. Who asks the questions matters as much as who answers. In many settings, women will not speak freely to a male enumerator, so it is important to recruit and train women enumerators (see Box 3). Other important choices include setting and tracking a quota for women respondents, rather than just hoping for balance; fitting the timing and the place of interviews around women's work; and keeping the questionnaire short. Finally, it is important to write gendered questions into the survey itself, asking who owns, who uses, who decides, whose field the food comes from throughout the interview, rather than merely adding a gender module at the end.

Consent must be informed and voluntary, which means explaining in plain language what the survey is for, who will see the answers, and that anyone may skip a question or stop at any point. Where participants are under 18, seek consent from a parent or guardian as well as from the young person. Think hard before asking about income, land, violence or household decision making, any of which can create trouble for a woman after the enumerator has left; if you are not going to use an answer, take the question out. Protect the data by locking the phones and tablets used for collection, restricting uploads to named people and keeping identifying details separate from responses.

Finally, two practical points to consider are that enumerators need proper training and fair payment; and that their gender, age and language shape what respondents will tell them. It is also important to plan from the beginning how the findings will go back to the people who were surveyed, in a form they can use.

Box 6. Two questions that changed what a survey could see in Cameroon

Contributed by: Medjiwa Kamga Simoni (Support Centre for Evaluation and Development, CAED, member of EvalIndigenous)

Simoni's survey of 142 households in Bafou North to find out why five heritage crops were disappearing from an area that had shifted from family polyculture to commercial market gardening turned on two apparently simple questions — which field most of the food came from (the woman's or the man's) and who decides which meals. The first question separates growing from eating and shows who is keeping a species alive; the second exposes decision-making power that production statistics cannot see. Alongside the answers, Simoni recorded who cooking knowledge is passed to, how long a dish takes to prepare, how long the household has been in commercial farming and where heritage seed comes from.

The answers showed a pattern that production figures alone would have hidden. Men kept the best land for commercial crops, pushing heritage species onto women's plots, where being known as a woman's crop was repeatedly given as a reason for abandoning it. Ancient taro needs two to four hours of cooking and pounding, while a modern substitute is ready in 45 minutes. Women who spend most of the year working commercial crops chose the substitute, while elders, who make the decisions, defended the old crop because the effort it demands signals respect. The survey was built on ritual observations carried out beforehand (see Box 4). The observation showed what was happening, while the survey established how widely it was happening.

Box 7. Recruit data collectors from the community in Nigeria

Contributed by: Patrick Simeon Ojapah (Okedejapah Trauma Victims Initiative, OTVI)

In Yola North and Fufore in Adamawa State, northeastern Nigeria, OTVI collects survey data on how heat, flooding, erosion and deforestation affect livelihoods and mental health. With little money to send teams into the field, it **recruits one or two data collectors who already live in the local government areas**, trains them on the questionnaire, and they upload responses through KoboToolbox as they go. It costs almost nothing in travel and data arrives at the respondent's, rather than the researcher's, convenience. Each area has a woman collector.

OTVI specifies that three-quarters of respondents should be women, including women who trade freely, women who need their husband's permission to take part in an economic activity, women who head their own households, and women who cannot leave the house without their husband. A woman from the same community is the only person likely to be able to reach the last group. Consent forms are signed before each interview, and participants are told they may withdraw at any point. Uploads are visible only to OTVI's director and a few collectors. The organisation is also moving to issue its own devices rather than rely on volunteers' personal phones — a small change that matters once data on named households sits on a phone other people also use.

Participatory mapping

Participatory mapping puts a map in the hands of the people who live in the place it shows. A group works on a large sheet of paper, a printed base map or a satellite image and marks what matters to them: **where resources are, who uses them, what has changed and where the problems lie**. A hand-drawn map needs nothing but paper and coloured pens; Global Positioning System (GPS) points can be added afterwards or the map redrawn in Geographic Information System (GIS) if the results have to speak to official planning. The approach includes a family of methods, such as resource mapping; change mapping (drawing the same area as it was and as it is now); seasonal mapping; threat or hazard mapping; mobility mapping showing where different people can and cannot go; and social or network mapping, which maps relationships instead of terrain. Sessions usually close with a plenary where groups present and check each other's maps. **The conversation that takes place while the map is being drawn is often worth more than the map itself**, so it is worth recording carefully.

A map is one of the quickest ways to make invisible use visible. Collection points, home gardens, medicinal plant patches, shellfish beds, processing sites and the paths between them appear on no official map, and their absence is what allows planning to proceed as if they were not there. Mapping also captures overlap and dispute, which a list of resources cannot do, and change over time, which is often the point. For gender and biodiversity data, **it is important to get women and men to map the same territory separately and compare the results**. The difference between the two maps demonstrates in a single picture how different people use a place differently, in a form that a planning office can read. It also leaves something behind, because the community keeps the map.

Watch **who is holding the pen**, since the person drawing decides what goes on the paper. Hand it deliberately to someone who does not usually hold it. Use icons, symbols and objects rather than written labels so that reading and writing are not a condition of taking part. Prompt explicitly for the places and times that standard mapping misses: where water and fuel are collected, where wild foods and medicines grow, where women process and sell, which routes they use and at what time. **Record place and species names in local language**. Hold the session somewhere women can reach and at a time that does not compete with their work, and think about who will mind their children during the session.

Maps are powerful, and that cuts both ways. A map recording sacred sites, medicinal plants, fishing grounds or land under customary claim can be used to protect them or to take them, so agree before the first line is drawn who owns the map, who gets a copy, what will be published and at what level of detail. FPIC applies to the map as an object, not just to the session. The community should keep the original, and it is often right to publish an area rather than precise coordinates. Secure the permissions of customary and administrative authorities where these are required. Budget and pay for participants' time where appropriate and possible, a translator if the working language is not the local one and a facilitator who knows how to run the exercise. A badly facilitated mapping session produces a decorative poster and very little else.

Box 8. Two maps, two kinds of visibility in Guatemala and Colombia

Contributed by: Marina Leticia López Sincal (National Council of Protected Areas, CONAP); Isabel Núñez Lendo (IUCN)

On **Guatemala's** Pacific coast, where protected mangroves support fishing, salt production, tourism and the nesting of the olive ridley turtle, López Sincal used participatory mapping to identify what women know, use and manage in the marine-coastal zone. Two focus groups drew and discussed the territory, supported by short presentations, case analysis, community drawings and guided discussion, and the work closed in plenary. **The exercise made visible the part of the value chain that begins after the boats land**: processing and handling the catch, selling it locally and regionally, and holding up the family and community economies that depend on it. Women's work turned out to be essential to the marine-coastal chain and mostly absent from territorial and environmental planning. The next round will draw more participants from communities rather than institutions, and close the loop by taking the findings back and agreeing follow-up priorities with the people who produced them.

In the **Colombian** Caribbean islands of Providencia and Santa Catalina, sargassum has washed ashore in growing quantities since 2011, decomposing in the mangroves and killing the fish trapped in the roots. Here, Núñez Lendo combined participatory community mapping with structured interviews to establish where and when the blooms arrive and what they do to people. **The field team was mostly women, which changed who took part.** Women engaged more readily in the study, and when male fishers could not attend, their wives came instead, so a sector normally recorded by men also produced women's knowledge. The team logged participation by gender, age, occupation and interests, allowing differences in need and priority to be seen rather than assumed. Núñez Lendo noted that, although the islands are Spanish-speaking, locals prefer English Creole, so the team should have included a local translator from the outset. A broader mobilisation effort before the mapping began would also have attracted a fuller range of participants, including women, as turnout is decided in the weeks before, rather than on the day of, a session.

Participatory rural appraisal (PRA)

PRA is a family of visual, group-based exercises undertaken with a community over a short and intensive period, usually a few days. It grew out of rapid rural appraisal in the 1980s and 1990s around the principle its best-known advocate described as handing over the stick: the outsider sets up the exercise and then stops talking. The standard tools include **social and resource mapping, transect walks** across a landscape with people who narrate it, **seasonal calendars** of rainfall, labour, food, income and illness, **daily activity clocks, historical timelines, matrix scoring** and **ranking** of species or varieties against criteria chosen by the group, **wealth or wellbeing ranking**, and Venn diagrams of the institutions a community deals with. Everything is done in the open with materials anyone can use, such as stones, seeds, sticks, chalk and paper, so literacy is not a condition of taking part and the group can see and correct the result as it forms.

The visual tools are unusually good at surfacing gendered patterns because most of them force a comparison. A daily activity clock drawn by a women's group beside one drawn by a men's group is the clearest evidence of unpaid work and time poverty that can be produced in an afternoon, and it is produced by the people it describes. A seasonal calendar shows when fuel, water and food are scarce and who absorbs the shortage.

Matrix ranking can be particularly useful in biodiversity work. When women and men separately rank tree or crop species, they will usually apply different criteria — timber and cash on one side; and fuel, fodder, medicine, food and storage life on the other — and this divergence is a biodiversity finding. The outputs are quick, relatively inexpensive and legible to all participants.

Run every exercise separately with women and men, and then compare the results. Split groups further where it matters — for example, older and younger women may disagree — as such disagreements are data. Make sure a woman facilitates the women's group. Choose a time that does not collide with cooking, water collection or market days, and think about childcare before you set the date. Because the tools are visual, they travel across literacy and language if you use objects and symbols rather than writing words on cards. **Protect the differences between groups when you get to plenary**: the standard failure is a closing session where the men's version is presented as the community's and women's findings become a footnote.

PRA produces data in public, and some of it is sensitive. Wealth ranking sorts people in front of their neighbours; mapping can record activities that are technically prohibited; discussion of decision making can expose a woman to consequences at home. Decide with the group what stays in the room and what is shared beyond it. The method can also raise expectations because an intensive few days of questions may look like the beginning of a project, so be honest at the outset about what will and will not follow. Participants give substantial time and should be compensated for it, and the outputs — the maps, calendars and rankings — belong with them. When using the findings, it is important to state two limitations: quality depends almost entirely on facilitation; and PRA results describe the group that produced them rather than a population.

Box 9. From young people's workshops across Paraguay to national and international forums

Contributed by: Adrián Valiente Benítez (Red Paraguaya de Jóvenes por la Biodiversidad, Global Youth Biodiversity Network — GYBN — Paraguay)

GYBN Paraguay ran two rounds of workshops with young people across eight departments and the capital — from Asunción and Ciudad del Este to the Chaco at Filadelfia — to build youth priorities into the country's national biodiversity strategy. Each workshop opened with a short capacity-building session on the CBD, KM-GBF and national strategy, so that everyone shared a vocabulary before the participatory work started. Participants then moved into small groups with large paper, coloured markers, sticky notes and **printed cut-out icons for water, land, seeds, community and non-human inhabitants**, and mapped the threats to their territory, the actors in it, and what they wanted it to look like by 2030. Groups presented and validated each other's maps in plenary. The five regional workshops then fed a national consolidation workshop that synthesised nine priority themes.

Of the 413 participants across both rounds, 71% were young women, many of them local leaders. Registration recorded gender, including non-binary, alongside membership of Indigenous Peoples and LGBTQI+ collectives, on the reasoning that exclusion runs along several axes at once. The identity data were not published, for participants' security. The resulting priority document calls explicitly for protecting women leading conservation work in rural areas. Consent for the use of images and data was collected at registration, and results were published as collective outputs rather than attributed to individuals. Valiente Benítez noted that the **workshop logistics posed a constraint**, as GYBN could not guarantee transport, meals or accommodation, which largely excluded rural and Indigenous young people on the basis of cost.

With well over 100 participants at a time, individual voices were also at risk of being averaged into categories. She therefore recommends smaller follow-up dialogues with specific groups, including Indigenous young women. She also notes that without trained facilitators, mapping becomes superficial very quickly. The priorities identified in this process were formally delivered to the national CBD focal point, presented at the 16th CBD Conference of the Parties (COP16) and incorporated into Paraguay's updated NBSAP.

Participatory action research (PAR)

PAR is when the people affected by an issue take part in deciding what will be investigated, help gather and interpret the evidence, and then use the results to act on their own situation. It runs in cycles — plan, act, observe, reflect, plan again — rather than starting with a proposal and ending with a report. What separates it from participatory methods in general is **ownership**: participants are co-researchers rather than sources of data, and the purpose is not only to produce knowledge about them but to change their circumstances. In practice, that means designing the questions together, training community researchers, analysing the findings jointly and agreeing in advance what to do with them and who will do it. Any of the other methods in this handbook — mapping, interviews, monitoring and so on — can sit inside a PAR process; who makes the decisions is what determines whether it is PAR.

For gender and biodiversity data, the most important thing PAR shifts is **who defines the problem**. Research agendas set from outside tend to ask about species, hectares and yields; when asked to set their own agenda, women's organisations tend to ask about access, decision making, workload, safety and who benefits, producing different data about the same landscape. PAR also produces evidence in a form participants can use — a map of their own network, a dataset they own, an argument they can take to a municipality and so on — rather than simply a report they appear in. And because it runs in cycles, it is possible to track change in women's participation over time throughout the PAR process.

It is important to bring women in from the start — that is, at the PAR design stage — rather than at the data gathering stage. Expect the priorities that emerge to be framed in the language of livelihoods, water, health or land rather than biodiversity, and treat that as accurate rather than something to be corrected. **Pay for people's time**, if appropriate and possible. Women leaders have very little spare time, and PAR asks for a great deal of time, so agree the workload with them and compensate it. Support the women who take on research roles with training and other benefits. Watch for capture within the group as well as outside it, since a women's organisation has its own hierarchy. And finally, return the results in a usable form and in good time to keep the cycle going.

PAR does not remove the power difference; rather, it makes it more visible. The outside partner usually still holds the funding, the analytical tools and the publication, so it is important to agree authorship, data ownership and rights of use in writing at the start of the project rather than at the end. If available, put the design through an institutional ethics review. Think carefully about visibility: making women's environmental leadership public is often the aim; but in some places, this is what puts a defender at risk, so decisions about who and what is named belong to the people named. Because PAR builds a long relationship, plan the exit as deliberately as the entry and be honest from the beginning about how long the funding will last and what happens when the funding stops.

Box 10. Women leaders map their own networks in Colombia

Contributed by: Fanny Howland, Katherine Quintero (Alliance of Bioversity International and CIAT); María Paula Velasquez (Fundación Natura)

Between 2022 and 2024, working with the Rural Women's Directorate of Colombia's Ministry of Agriculture, Fundación Natura and the CGIAR Gender Platform, the Alliance of Bioversity International and CIAT developed a methodological guide for women in the National Interethnic Women's Network for Environmental Defence to map their own territorial networks. **The women shaped the design and then ran it themselves.** Twelve leaders — who were peasants, Indigenous women, African descendants and fisherwomen — mapped the institutions and organisations they deal with, the themes they deal with them on, the strength of each relationship and what each relationship produces, from policy influence and closing gender gaps to conservation and climate resilience.

The point was not to gather data about the women but to hand them a picture they could act on, including the actors missing from the network, the relationships worth strengthening and where their strategies to manage and protect the environment should go next. Seven of the 12 received their results back as territorial profiles. Repeating the same exercise at intervals could create a monitoring tool that shows how relationships and achievements shift over time.

Three practical lessons came out of this exercise. The guide was **printed on paper, because that was what the women preferred,** and the team accepted the tedious work of digitising handwritten results afterwards rather than imposing a digital tool. A WhatsApp group containing all the participants and a researcher answered questions as they came up during implementation, which mattered because the women were working alone in their own territories. And because women leaders have very little spare time, they agreed the time required in advance and **were paid for their work**. The guide went through the Alliance of Bioversity International and CIAT's institutional review board before it was used.

Interviews

An interview is a guided conversation with one person or occasionally a pair of people. It comes in three degrees of structure. A **structured interview** keeps the wording and order fixed and is essentially a questionnaire read aloud; a **semi-structured interview** works from a topic guide of open questions that the interviewer can reorder and follow off the path; and an **unstructured interview** opens with a single question, and goes wherever the person takes it. Variants include **key informant interviews** with people who hold particular knowledge or positions and **life histories**, which follow one person's trajectory over time.

In interviews, it is useful to ask open questions, followed up with: "can you tell me more about that?" Record with permission and take notes. Most interviews run for 45–90 minutes and tend to stop when new conversations stop producing new material.

Interviews reach information that cannot be uncovered in a group situation — disagreements with the community line, knowledge held by a single person, sensitive topics and anything a woman would not say with her husband or mother-in-law in the room. That matters for biodiversity data because **specialised knowledge is often individual rather than communal.**

This includes, for example, the woman who knows which plants treat which illnesses, the one who keeps a plant variety nobody else still does or the one who remembers where a species used to grow. Interviews are useful for uncovering detail — local species names, preparation methods, seasons, who taught whom and so on. They also let you follow a thread that a questionnaire would have cut off after a single line. Key informant interviews add an institutional layer — for example, showing how the people expected to implement a national policy understand that policy.

Who is on the interview list decides much of the result. **Key informant lists default to officeholders, who are usually men**, so it is important to build the list by knowledge and role rather than by title. For example, the person who manages the seed store probably has better knowledge than the person who chairs the committee. Where local norms require it, match interviewer and interviewee; speak to women on their own rather than in front of their husband; and be ready for the version women give in company to differ from the version they give when alone. Work in the local language, with an interpreter from the community if needed. Fit the time and place around the interviewee's day rather than yours. And treat women as sources in their own right rather than a supplement to a man's account or stand-in for her household.

It is important to record consent at the start of the interview and revisit it if the conversation moves somewhere unexpected. Be honest about the limits of anonymity: in a small community, a role and a location will identify a person however carefully you remove their name. Record only with permission, store files securely and separate names from transcripts. Interviews create expectations simply by taking someone's time and attention, so be clear about what the research can and cannot lead to, and do not ask about problems you cannot act on. Where an account could expose someone to retaliation — from their household, employer or an authority — the decision about whether to use it belongs to the person who gave it. Budget realistically for transcription and translation, which take several times longer than the interview itself, and plan how you will return the findings.

Box 11. Two uses of the interview in the Democratic Republic of Congo (DRC) and Suriname
Contributed by: Nestor Linangola Ngandi (Organisation pour la Protection de l'Environnement et le Développement, OPED); Astrid Runs (Alinea International)

Around Garamba National Park in Haut-Uélé, northeastern **DRC**, OPED documented forest plants used in cosmetics (*cosmétopée*) with rural communities including Logo, Kakwa, Mondo, Dhongo and Azande. This work formed part of a project implemented in June 2025 with support from Cosmetic Valley, the French competitiveness cluster dedicated to the perfume and cosmetics sector, to document and valorise forest plants used in traditional cosmetic practices in the Garamba landscape. **The study used semi-structured interviews to elicit the knowledge and other tools to validate it**. This included questionnaires on KoboCollect, using the PlantNet app to identify plants in the field and collecting herbarium specimens to later confirm identifications against the photographs. The combined data produced biodiversity indices and an importance value index for each species. **Women's knowledge of skin and hair care was a deliberate target of the interviews**, and a woman trainer facilitated the workshops where results were returned to the communities alongside sustainable harvesting training. Consent was formal: a collaboration agreement and FPIC signed by users and both customary and administrative authorities. The team noted that only 34.3% of those recorded were women, due to social constraints.

In **Suriname**, where forest covers more than 90% of the land and planned offshore oil and gas exploration is raising concerns about coastal degradation, Alinea International used key informant interviews as one strand of a gender-based assessment plus for the Biodiversity Governance Innovation Programme, funded by Global Affairs Canada, alongside desk review, FGDs, consultation sessions and observation.

The value of the interviews lay in the participant list, which comprised government officials, women's organisations, youth, Indigenous and Tribal Peoples, people with disabilities, CSOs and LGBTQI+ representatives, which ensured the picture of who takes part in biodiversity governance was assembled from the accounts of a range of people, not only those already inside it. The study used FPIC, sought consent again for using the data collected and returned the draft findings to stakeholders for validation before they were finalised.

Community monitoring

Community monitoring involves people in a place collecting data themselves, repeatedly, over time. Trained local monitors regularly record a small set of agreed indicators — such as species seen, catch size and composition, water quality, clearing, restoration survival, rainfall and encroachment — on a simple form, in a notebook or through a phone app. Key aspects that influence whether the approach works include: which indicators matter; who collects them; how they are paid or recognised; how often they collect the data; where the data go; and who is obliged to act on them. Related traditions include citizen science, community-based natural resource monitoring and **watchdog monitoring**, where a community organisation tracks whether a project, company or government is doing what it promised.

What distinguishes these forms of monitoring from a one-off exercise is that **the value is in the series**, so simplicity and continuity are critical. A long record held locally picks up change that no visiting survey is frequent enough to see — such as a species arriving later each year, a catch getting smaller or a spring drying earlier. Women's routine movements cover parts of a landscape and times of the day that external monitors never see, making their observations a genuine addition to the record. **Being a monitor is typically paid or recognised work and a position of some authority**, so if a programme only recruits men, it widens the gap it was meant to measure. Recruiting women monitors, on the other hand, can have the opposite effect. When recruiting women as monitors, it is important to make sure the role carries the same payment and standing it would for a man.

Rather than handing an indicator list to the women monitors, design it with them, because the things they track — fuel, wild foods, medicinal species, water quality at the collection point — are frequently missing from a standard form. Use symbols and simple forms so that literacy is not a barrier, and check who controls a phone before building the system on an app. Think about safety and timing, particularly for monitoring that involves patrolling or confronting outsiders. **Make sure the data reaches the people who decide, with the monitors' names attached to it, unless this poses risks to the monitor** (see next page), because monitoring that disappears into someone else's database stops being community monitoring.

The central question is ownership. Agree at the outset who holds the dataset, who may publish from it and, if project-based, what happens to it when the project ends. This is data sovereignty, and for Indigenous Peoples and local communities, it is a right. Monitoring that records illegal logging, fishing or encroachment can put monitors at risk, so in these cases, it is important to build in anonymity, agree to a protocol for what is reported and to whom, and never place community monitors in an enforcement role they have not chosen and in which they cannot be protected. Sensitive locations may need to be recorded at low resolution or withheld. Compensation is required for a commitment measured in years, and there should be a visible feedback loop: if nothing ever comes back and nothing ever changes, people stop recording, and the series that made the effort worthwhile is lost.

Box 12. Women's involvement in community monitoring in Nigeria and rural India
Contributed by: Amanie Stella (Society for Women and Youths Affairs, SWAYA); Sumitra Shiral, Laxmikant Malvadkar (Swayam Shikshan Prayog)

In Ogoniland in the Niger Delta, **Nigeria**, SWAYA monitors the Ogoni clean-up and mangrove revegetation programme alongside other CSOs. The work is unglamorous and continuous, requiring a presence at remediation sites, sample collections, mangrove restoration tracking and engagement with the people working on the sites. **The monitoring changed the programme**. Women had been left out at the earlier stages, but sustained monitoring and engagement by SWAYA and its partners resulted in more women being brought into the clean-up work, with effects on their livelihoods as well as on the recovery of the polluted area.

Across roughly 3,750 villages in Maharashtra, Bihar, Kerala, Assam and Odisha, in **India**, Swayam Shikshan Prayog's Sakhi Food Security Farming programme puts record-keeping in the hands of a woman in each village. The *sakhi*, a woman farmer-facilitator, brings together at least 100 women farmers, collecting household information and keeping records of every agricultural season and farming activity, entering them on her own mobile phone into a system called M-Grant, and updating them as the season progresses. Around 375,000 women take part. The sequence matters: after registering, the women take part in FGDs and participatory planning to establish the problems and possible solutions, and once these have been established, the routine record-keeping begins. This way, women decide what is worth tracking before anyone begins tracking it. **The data are collected by the women whose work they describe**, capturing what they choose to grow, which inputs they make rather than buy and what they still need. This approach makes the *sakhi* the link between farmers, government schemes and markets.

Focus group discussions

An FGD is a guided conversation among a small group of 6-12 people who have something in common. The point is the interaction: participants agree, qualify, contradict and build on one another, and that produces material that individual interviews do not. A strong facilitator works from a short guide of open topics, keeps one or two people from taking over, draws in the quiet ones and works with a note-taker who records who said what and what the group did with it. Most FGDs run for one to two hours. **Composition is a critical design decision**: make the group homogeneous (for example, by gender, age, status or language) to prevent people being silenced, and vary that dimension between, rather than within, groups.

Focus groups are good for exploring norms, shared perceptions, community priorities and disagreements. They are an efficient way to hear how a community talks about its environment and can offer important information for shaping questionnaires. They surface collective memories of change — such as what the forest, catch or rains used to be — as well as disagreements between generations about whether such change matters. They are poor for anything private or personal, and they do not produce numbers, so they cannot stand in for a survey either. In a group setting, people tend to correct each other, so an account that survives an FGD has been through a kind of validation that an individual interview has not. When it comes to gender data, **running the same discussion with a women's group and a men's group shows the differences and similarities between them.**

Hold women-only FGDs, with a woman facilitator, as standard rather than as an addition. In many places, customary norms discourage women from speaking in front of elders or men, and a mixed group may simply produce the men's account with women present. Consider splitting further, since younger and older women, or women with and without land, may not speak freely in front of each other. Speaking first to community leaders about the relevance of women-only groups and how the whole community will benefit from them can help avoid backlash or suspicion about the process, which some communities might see as an interference in their dynamics. Choose a time and place that fit around women's work and are safe to reach, and plan for childcare, refreshments and travel costs as part of the design rather than an afterthought. Watch dominance actively; a facilitator who lets three people carry a discussion has run an interview with an audience. When writing up the findings, present the discussions from the women's groups as a finding in its own right.

You can promise confidentiality on your own behalf but not on the group's behalf, and you must make this clear to participants before they decide what to say. Do not raise issues in a group that could expose a participant once everyone has gone home; this rules out most questions about household conflict, violence, income and rule-breaking. Take consent for recording separately from consent to participate. Compensate people for their time and travel and be careful not to imply that a project will follow. When using or sharing the results, it is important to point out that a focus group describes the people in the room, not a population, and while reaching agreement on something may mean it is true, it could also mean the person who disagreed decided not to say so.

Box 13. Running women-only FGDs in Nigeria and 30 countries

Contributed by: Habiba Mohammed Sani (Ahmadu Bello University), Joy Oluwatomi Folorunso (Nigerian Institute of Social and Economic Research, NISER), Eva Hershaw (International Land Coalition, ILC)

In northern **Nigeria**, Mohammed Sani used FGDs to record what women know and do about climate adaptation, particularly about cutting trees for cooking fuel and the effects on land and habitat. **She ran the groups with women only**, because with no men present, the discussion felt like a conversation the women were having among themselves, and they said a great deal more. The discussions revealed that it is men, not women, who buy fuel locally, so research with women alone could document, but not change, the practice. Sani now plans a parallel study with men.

Along the coast of Lagos, Ogun and Ondo States, Oluwatomi Folorunso used focus groups with elderly men, elderly women and young people as part of a study across 56 coastal settlements that also included a survey of 1,782 respondents and GIS mapping of flood-prone and degraded areas. In the FGDs, people who had watched erosion, pollution, water hyacinth invasion and flooding over decades described these processes. Folorunso notes that in mixed settings, women's participation required careful and skilled facilitation to keep contributions balanced.

LANDex, the land governance monitoring tool the ILC runs in more than 30 countries, **builds a women-only FGD into its standard methodology**, held separately from the mixed sessions. Hershaw reports that the women-only sessions repeatedly surface issues that do not come up in mixed groups. The guidance sets a minimum for women's representation both among respondents and on the data collection team. Every relevant indicator is also disaggregated, and where disaggregation proves impossible (which it often does), this is recorded as a finding. Scheduling the separate sessions takes extra planning and money, which is a cost to budget.

Photovoice

Photovoice hands the camera to participants, with small groups given a question and cameras or phones, and asked to photograph what the question means where they live. They then meet, choose a few images each, talk through them and write their own captions. The approach was developed in the 1990s by Caroline Wang and Mary Ann Burris while they were working with rural women in Yunnan, China, and the sequence has remained much the same: recruit a group, agree the question together, train them on camera use and photo ethics, allow a period for taking pictures, and hold group sessions where each photographer presents. The process usually ends in an exhibition or a presentation to people with the power to act.

A widely used prompt for the photovoice approach — SHOWED — is based on the following:

- What you **S**ee
- What is **H**appening
- How it relates to **O**ur lives
- **W**hy the situation **E**xists
- What we can **D**o about it.

Photovoice matters because it moves the framing, not just the subject. Participants decide what is worth photographing — a dry standpipe, a cleared hillside, a market stall, a cooking fire, a child carrying water — and that decision is itself the data. Images cross literacy and language barriers in both directions: people who cannot fill in a form can produce evidence and audiences who would not read a report will look at photographs. It is unusually strong for **making routine work visible** — a photograph of a two-hour walk to fetch water does not have to argue that the walk exists. It also produces the advocacy product and dataset in a single process, which few methods do.

Ask first who controls a phone or camera in the household, since the answer is often not the woman you are working with. If you need to, provide the equipment. If mixed groups would constrain what participants show or say, run women-only discussion groups. Think about safety before the shooting period — because photographing certain places, activities or people can create trouble for the photographer — and agree together what is off limits. Take the time burden seriously and keep the shooting period short and flexible.

The caption is also data, so record it in the photographer's own words and language rather than paraphrasing it. And let the photographers choose which images are shown and how they are credited. That choice is part of the method that makes it different from a photographer visiting a village.

Photographs identify people, which makes the ethics heavier than for most methods. You need to gain consent twice over — first, from the photographer and second, from everyone who is recognisable in the frame — ideally on a short written form carried during the shooting period. Agree a rule about photographing children before you start; the safest rule is not to.

Copyright and ownership should stay with the photographer, and make sure you get written agreement on where images may be used, by whom and for how long, including whether an image can be reused in a future publication. Strip location metadata before sharing files and be careful with images that show illegal activity or damage attributable to a named person. Print copies and give them back; for many participants, this is the part of the project that lasts.

Data management

Data management includes how we collect, organise, protect and store data. It is an important precursor to effective data analysis as it ensures the reliability, security and usability of project data. Robust data management practices are a critical link in the data value chain: moving data from the collection phase to uptake and use. Multiple elements should be a part of an organisation's or project's data management protocols, including data organisation, quality assurance, data security, data storage and ethics.

Data organisation and quality assurance

Before you can analyse raw data, they must be organised consistently and reviewed for errors. Clearly and consistently organise the protocols for your project files to be ensure all relevant project materials, including data, are easily accessible and understandable. Create an organising framework for all your project folders, using meaningful and clear descriptions of the type of information in each folder, and avoiding version control issues by keeping track of changed or updated files. Document the data about your data (metadata) which explain the content, context and structure of your data files and help ensure your data are easier to retrieve, use and manage.

Establishing clear data management and organisation protocols across every stage of the data value chain is crucial for quality assurance. Take special care to maintain data quality throughout the research process. **Quality assurance strategies and policies ensure that the data are accurate and complete by addressing any errors, duplicates or missing information**. They also help maintain data consistency and reliability across entries and ensure data are formatted in a way that aligns with the overall analysis objectives and methodology. Such practices maintain the validity of research results and address any donor or organisational compliance concerns.

Data security and storage

Effective data security practices protect organisations, partners and research participants from data losses, thefts and breaches. This is particularly important if data contains any personally identifiable information as such data needs to be managed to protect individuals' privacy and comply with national or international data protection standards and laws. Best practices related to maintaining data security include controlling data access, using encryption, backing up data regularly and avoiding transmitting sensitive information on public or unsecure networks.

For example, for a research project exploring the non-timber natural resources and conservation of ecosystems in the Trifinio Fraternidad Transboundary Biosphere Reserve (RBTF) (see Box 15) GAIA Association El Salvador created a robust data security and storage protocol. This was particularly important given the risk of persecution, coercion and threat in the geographical region of the study, which included parts of El Salvador, Guatemala and Honduras. The project stored and managed data through a private internal network and server, using cloud storage for select audiovisual information, which was only shared with core partners through controlled access. This allowed the research team to maintain the security and privacy of the communities they engaged with at every stage of the project.

Ethics and confidentiality, community ownership

The core element of any research project, especially ones that involve historically marginalised communities, is **maintaining data confidentiality and community ownership in an ethical way**. When developing projects, bear the following principles of data ethics in mind.

1. An individual has **ownership** over their personal information and you must obtain a person or community's consent before collecting, analysing or using their data.
2. Be **transparent** with individuals and communities about how you will collect, analyse and use their data.
3. Maintain an individual or community's **privacy and confidentiality** at every stage of the data value chain.
4. Ensure that the outcome of your research **does not inadvertently harm** the individuals and communities you engage with.
5. Mitigate **researcher or algorithmic biases** throughout the research process.

Fondo Mundial para la Naturaleza (WWF) Colombia applied such ethical considerations, for example, when piloting the Gender Thermometer tool (see Box 16), a conceptual approach that brings together conflict sensitivity and environmental peacebuilding to strengthen inclusive biodiversity conservation. This included:

- Applying the **Do No Harm principle** to ensure any biodiversity conservation initiative does not inadvertently exacerbate existing conflicts or structural gender inequalities.
- Using **official secondary data** on armed conflict, human rights, gender and biodiversity in a responsible and critical way.
- Incorporating a **human rights-based approach** to promote gender equality, environmental justice and the rights of all people involved in or affected by conservation efforts.

- Adopting an **intersectional and intercultural approach** that recognised how multiple and intersecting forms of discrimination affect women, men, LGBTIQ+ people, Indigenous Peoples, African-descendant communities and rural communities.
- Developing a robust data management system to ensure confidentiality and **informed risk awareness** of environmental human rights defenders and other communities they engaged with.

Similarly, when conducting a gender-responsive livelihood mapping and socioeconomic assessment in industrialising regions, researchers at India's Krea University integrated ethical consideration in their work. To protect participant privacy, they did not disclose **personal identifiers and confidential information** in the analysis or reporting. They stored the data securely and used them only for academic and research purposes. The methodology also respected **community knowledge and local experiences** by ensuring women's perspectives and lived realities were represented accurately and responsibly. The research process also aimed to avoid reinforcing existing social inequalities or creating discomfort among participants during discussions on gender roles, livelihoods or economic vulnerability.

Data analysis

Data analysis is the process of transforming and interpreting data to find useful insights and support decision making. It helps convert raw data into meaningful information to understand problems and craft solutions. There are many types of data analysis you can use, based on the type of data collected and overall project objective, including qualitative, participatory and intersectional data analysis and triangulation.

Qualitative analysis

Qualitative analysis is the process of **examining non-numerical data**, such as text, images, videos and behaviours, to find patterns, themes and in-depth insights. When conducting qualitative analysis, researchers take on an interpretative role, so you must ensure the analysis is consistent and credible. You can do this through **inter-rater reliability** — that is, having multiple researchers code the same data to verify that they interpret the categories and information in the same way.

Box 14. Conducting qualitative data analysis

Contributed by: Astrid Runs (Alinea International, Suriname)

In Suriname, Alinea International through the Biodiversity Governance Innovation Programme, funded by Global Affairs Canada, undertook a gender-based assessment plus to understand how (if at all) women, Indigenous Peoples, youth, persons with disabilities and LGBTQI+ people are included in **biodiversity planning and related governance structures**. It used a qualitative data collection approach, which included a desk review of relevant literature, field notes and observations, interviews and FGDs. After collecting the data, the researchers uploaded and organised all digital materials in a designated project folder, **transcribing video recordings and categorising them** based on the thematic domains identified during the process. The team then read the transcripts and listened to the interviews to conduct a **decolonial, intersectional and culturally sensitive analysis** of the data collected.

This included an **iterative data analysis process** through thematic coding, revisiting source data and consulting with key stakeholders. Conducting the data analysis alongside a review of the interviews and FGDs helped the team identify interconnected patterns and gaps related to social inclusion and biodiversity governance.

The analytical process centred the lived experiences, knowledge and perspectives of historically excluded communities, including women, youth, Indigenous and Tribal Peoples, persons with disabilities and LGBTQI+ communities.

The analysis highlighted their contributions to biodiversity governance and management and sourced recommendations for how best to **ensure biodiversity governance decision-making is inclusive and representative of the communities it serves.**

Participatory analysis

Participatory analysis is a collaborative research methodology where community members, stakeholders and participants work with researchers to review data, identify themes and shape the findings. It is a way to make the research process more inclusive and transparent. Participatory analysis allows researchers to integrate multiple perspectives into their work, helps build trust with local communities and facilitates the development of **contextually-informed research outputs.** When conducting participatory analysis, ensure you do so in an inclusive and ethical manner, compensating contributors and recognising their expertise and insights.

Box 15. Conducting participatory research in the Trifinio Fraternidad Transboundary Biosphere Reserve (RBTF) and Montecristo Trinational Biological Corridor (CBTM)

Contributed by: Berta Gladys Medrano Mejía (GAIA Association, El Salvador)

The GAIA El Salvador Association implemented a participatory research approach within the framework of its medium- and long-term project Empowerment of women, children and youth for active and substantive participation in the consolidation of the RBTF and Montecristo Trinational Biological Corridor in the Trifinio Region, which covers parts of Guatemala, Honduras and El Salvador. The RBTF encompasses three priority ecoregions: Central American montane, pine-oak and dry forests. It also contains significant remnants of mixed, gallery and riparian forests and ecosystems that could inform climate change adaptation and mitigation processes.

To understand how women, children and youth access and are impacted by non-timber natural resources, GAIA established a research line titled 'Non-timber natural resources for women's sustainability and ecosystem conservation in the RBTF', adopting a **mixed-methods, participatory approach** to appropriately engage historically excluded groups throughout the project.

In the preliminary research phase, the team conducted **targeted capacity strengthening and empowerment training** with community leaders around key data processes: observation, identification, recording, analysis, interpretation, systematisation and dissemination.

This allowed them to identify and integrate community leaders with prior training into the research team as co-researchers and collaborators. After collecting the data, GAIA adopted a **community co-creation and validation** approach for the participatory analysis of both quantitative and qualitative data.

When analysing **quantitative data**, the research team held an initial workshop to present the systematised data that was disaggregated and intersectional. This allowed key stakeholders to familiarise themselves with the information collected through the project. The second workshop was focused on **participatory co-analysis**, where participants were given systematised data in tables and graphs which they then interpreted using playful tools in the local language. Through an open and transparent dialogue, the team was able to contextualise the quantitative information based on the lived realities of local communities in the RBTF.

For the **qualitative data analysis**, the team conducted separate FGDs with men and women to create a respectful, inclusive, equitable and safe space for participants to share their feelings, concerns and disagreements. FGD participants were then organised into working groups, with each assigned specific tasks to **systematise and interpret the information** collected through the FGDs.

The research found that women undertook significantly more conservation actions than men, yet had unequal access to and control of land in the region. By integrating local knowledge into their research process, GAIA was able to register 357 identified plant species, grouped into 105 botanical families in the uses: food, medicinal, cultural, artisanal and ornamental. They documented that while men know about plants and where to gather them, in 95% of the cases, it is the women who know how to use the plants to feed their families, treat illnesses or decorate their homes. Despite this deep connection to and knowledge of the land, women are often excluded from land tenure and ownership of active and substantive participation and integration into decision-making spaces.

Intersectional analysis

I**ntersectional analysis allows you to recognise the harmful impacts of overlapping forms of discrimination for a more nuanced understanding of problems and their potential solutions.** It is based on the theory of intersectionality, a term first coined by Kimberlé Crenshaw, a Black feminist and critical race scholar. Intersectionality recognises that people have many overlapping identities — such as race, gender, sexuality, disability status, class, sexuality, ethnicity, displacement status and rurality — which influence how they experience the world. Rather than considering these identities and conditions in isolation, an intersectional approach examines how they interact with unequal power relations and social, economic, political, institutional and territorial structures to produce differentiated experiences, barriers, opportunities and risks.

I**t acknowledges that different systems, institutions and socioeconomic and political structures often work together to create and reinforce inequities.** By adopting an intersectional approach to data analysis, you can enhance the accuracy and applicability of their work and ensure it is responsive to the needs of historically marginalised and excluded communities. In the context of gender and biodiversity, this type of analysis can help you identify differentiated risks, capacities, knowledge, agency and conditions for meaningful, safe and inclusive participation, informing more context-sensitive and gender-transformative responses.

Box 16. From an intersectional and intercultural gender approach to transformative action: the Gender Thermometer for inclusive biodiversity conservation

Contributed by: Marcela Betancourt Arguelles; WWF Colombia

As part of its approach to conflict-sensitive conservation and environmental peacebuilding, WWF Colombia developed the Gender Thermometer as a practical analytical tool that applies an **intersectional and intercultural lens to territorial and contextual information** on the convergence of structural gender inequalities, armed conflict dynamics and strategic ecosystems. When developing the Gender Thermometer tool, WWF Colombia conducted an intersectional analysis of the data collected, using five guiding questions to assess the:

1. Context of non-international armed conflict
2. Structural gender inequalities, intersectional discrimination and intercultural dynamics present in a territory
3. Conservation initiative's capacity to integrate conflict sensitivity and the integrated gender approach
4. Conditions for participation, leadership and the safety of people facing differentiated gender-related risks
5. Technical and institutional capacities for integrating conflict sensitivity and the integrated gender approach into conservation and environmental governance initiatives.

The approach recognises that conservation efforts and environmental governance in Colombia's territories and ecosystems are shaped by armed conflict, structural gender inequalities, intersectional discrimination and intercultural dynamics. The tool recognises that **gender-related risks are not experienced uniformly.** Armed conflict can deepen and exacerbate risks, particularly for women, girls and LGBTIQ+ people, and these may intensify when gender intersects with other forms of inequality and discrimination, including Indigenous and Afro-descendant identities, rurality, environmental leadership and territorial marginalisation.

By incorporating an intersectional and intercultural lens, the Gender Thermometer can **inform decision making to strengthen conflict sensitivity and guide actions that contribute to inclusive biodiversity governance and environmental peacebuilding.** The tool's development and pilot implementation highlighted the importance of **meaningful participation** by women, Indigenous Peoples, African-descendant communities, rural communities and other territorial stakeholders to understand context-specific risks, recognise existing capacities and inform locally appropriate, culturally relevant and gender-responsive responses. The Gender Thermometer has been piloted in biodiversity conservation initiatives in the Colombian Amazon and is undergoing validation.

Triangulation

Triangulation uses multiple data types, sources or perspectives to increase the credibility and validity of research findings. It helps limit the influence of personal biases in skewing results, confirms that different angles or data sources can lead to the same overall conclusion and gives a more complete picture of complex topics. It often provides a more balanced and comprehensive understanding of a specific topic, and you can use it in both quantitative and qualitative research projects.

Box 17. Triangulating qualitative and quantitative data in an Indigenous evaluation in Cameroon

Contributed by: Medjiwa Kamga Simoni (Support Centre for Evaluation and Development, CAED)

This research on agrarian transformation and gendered biodiversity **triangulated qualitative and quantitative data for gender-responsive biodiversity action**. The study produced quantitative data via a survey of 142 households, secondary data on species presence for five species and International Union for Conservation of Nature Red List threat categories (critically endangered, endangered and vulnerable). It also produced qualitative data from observation at three *sie* rite ceremonies (see Box 4); three FGDs with elders, women and youth; and ten life story interviews. The goal was to **cross-validate the qualitative narratives and quantitative analysis to produce evidence grounded in communities' lived experiences**. The core principle adopted was that pairing evidence for example, by placing a quote next to a number, is a powerful advocacy and storytelling tool.

The triangulation process was conducted in three steps:

Step 1. Collecting qualitative data to capture the 'why', and analysing these data using manual thematic coding.
Step 2. Collecting quantitative data to understand the 'what', and analysing these data using IBM SPSS Statistics and Microsoft Excel software.
Step 3. Cross-validating the qualitative and quantitative data once it has been coded, cleaned, and analysed, so each quantitative finding was substantiated by voices from the field.

Two analytical tools emerged from this cross-validation. The first is an **intergenerational conflict matrix**, which contrasts elders' perspectives with those of women and youth on three criteria: authenticity, symbolic value and the acceptability of food substitutions. The divergence between the two columns is itself the finding, since it explains why food preferences diverge between generations rather than simply changing over time. The second is a **causal chain** that links the shift from polyculture to commercial farming and the loss of cultivated diversity, through women's fatigue and the substitution of slow-cooking heritage species. Where the matrix shows a value conflict at a point in time, the chain shows how that conflict was produced.

This exercise allowed the researchers to **understand the nuances of biodiversity loss as not just an ecological issue; but a social and cultural one, too**. It also allowed them to understand the intergenerational transmission of cooking knowledge and change in dietary preferences within the community, and explored gender dynamics in food production to measure women's access, control and decision-making authority over land and food resources.

The researchers **respected Indigenous knowledge and data ownership** throughout the data collection and analysis processes. They obtained authorisation and permission from traditional authorities, observing cultural prohibitions such as not filming or photographing sacred dances, informed community members of the non-commercial purpose of the study, and respected participants' confidentiality.

Box 18. Triangulating geospatial data and gender-disaggregated socio-environment data

Contributed by: Joy Oluwatomi Folorunso (Nigerian Institute of Social and Economic Research (NISER), Nigeria)

The Nigerian Institute of Social and Economic Research used triangulation during a regional coastal environmental assessment in the Southwest Nigeria and investigated environmental degradation, biodiversity loss, climate-related hazards and livelihood vulnerability within key coastal ecosystems.

After collecting data from coastal communities, the study used **GIS, spatial analysis techniques and gender-disaggregated datasets** to analyse the distribution of environmental risks and biodiversity pressures across ecological zones. The methodology helped identify areas where environmental degradation disproportionately affected women and men whose livelihoods depended on coastal biodiversity resources.

The researchers integrated data collected through household surveys, FGDs, field observations, GPS mapping and environmental assessments into a geospatial database. They mapped environmental variables such as flooding, coastal erosion, pollution, saline water intrusion, vegetation degradation and water hyacinth invasion using GIS software. They then analysed gender-disaggregated livelihood and vulnerability indicators spatially to identify differences in how environmental pressures affected women and men across coastal settlements. The methodology involved:

- Georeferencing sampled coastal communities
- Developing a GIS database containing environmental and socio-economic variables
- Mapping environmental hazard hotspots
- Conducting spatial overlay analysis between environmental degradation indicators and livelihood activities
- Comparing gender-specific vulnerability patterns across ecological zones
- Producing thematic maps and vulnerability indices to support environmental planning and biodiversity conservation.

The approach **transformed large volumes of field data into visual and analytical products** that facilitated evidence-based decision making. The methodology ensured that women's experiences and environmental knowledge were visible within environmental assessment and planning processes. Through their analysis, the researchers found that:

- For a more inclusive study, gender variables should be integrated from the beginning of environmental data collection
- Community-generated knowledge significantly improves interpretation of spatial patterns
- GIS is most effective when combined with participatory approaches
- Gender-responsive spatial analysis strengthens biodiversity planning and environmental governance
- Capacity building in geospatial analysis is essential for sustainable implementation.

Data use and communication

The use and communication of data often come at the end of the data value chain. But this does not mean you begin thinking about this phase towards the end of your initiative; it is important to think about this from the beginning, alongside key rightsholders and communities. Key considerations when thinking about communicating gender and biodiversity data include who your audience is and the language you use.

Get to know your audience. No dataset speaks to everyone in the same way. Whether you want to speak to a woman farmer choosing whether to grow a new crop, a government official preparing a budget or a journalist working with a tight deadline, everyone will require different information from the same set of numbers and will interpret it in a different way. Before sharing your findings, you need to ask yourself who will receive this information and what you expect them to do with it. You may also want to consider how they feel about gender justice and how that might influence their position with the data and evidence.

Pay attention to language justice. Language is not neutral. Every word carries assumptions, world visions about social roles, and norms about who is considered an expert, whose knowledge is legitimate or valid, and which experiences should be made visible or valued. When it comes to gender and biodiversity data, achieving language justice means addressing power dynamics and the social norms that determine what men and women are allowed or not allowed to do or be. Key steps to address power dynamics and social norms include:

- Naming women explicitly when their presence and agency matter. For example, do not allow grammatical convention of different languages to erase political reality
- Communicate in the languages women speak — provide materials in local languages, use Indigenous terminology alongside technical vocabulary and recognise that many communities may have other ways of labelling or classifying species, ecosystems and seasonal cycles that cannot be fully captured by scientific nomenclature
- Resist simplistic categorisations — the intersection between biodiversity and gender does not lend itself to a simplistic, one-dimensional categorisation, as some forms of knowledge are empirical, embodied or passed down from generation to generation through complex, non-linear processes. Do not try to classify everything into clearly defined categories but rather, create the conditions that allow diverse forms of knowledge to coexist and, together, inspire action.

Box 19. Knowledge of everyday food as a form of expertise: the Tz'utujil women's recipe book project in Guatemala

Contributed by: Ana J Cabrera Pacheco (El Colegio de la Frontera Sur [Ecosur])

The recipe book project[13] took place in Chuk Muk, Guatemala, a resettlement community for people displaced by the 2005 landslide which partially buried the Tz'utujil Indigenous community of Panabaj. It aimed to document agrifood traditions through the daily work of Tz'utujil women, recognising their active role in sustaining Mayan ways of life after disaster and displacement, while **preserving agrobiodiversity knowledge** and **supporting livelihoods after a disaster**. The women were not passive subjects of the project; rather, they were the central experts, becoming co-authors of the recipe book and forming their own collective, *Ixqii' Ajtz'utjilaa'*.

Most meetings were held in the local Tz'utujil Mayan language to respect linguistic sovereignty. Data sovereignty remained with the community: the women controlled what knowledge they shared and how it was represented. This slow, iterative process **built trust and accountability** on the part of the researchers and **validated the women's everyday food knowledge as a legitimate form of expertise**. This methodology elaborates nine steps that can be applied in any context where knowledgeable women possess plant and food expertise, from forest-dependent communities to fisheries territories, while emerging from post-disaster recovery.

"First, we organised a visit to Panabaj, the area that they were forced to leave behind. Second, we organised a food festival in the framework of an academic conference held in Antigua, Guatemala – we collected a list of dishes and ingredients. Third, we invited local experts for workshops on soil, medicinal plants, and seeds. In these workshops they exchanged information and shared stories and knowledge. Fourth, we discussed the meals from the list, and they selected the ones they wanted to share in the book. Fifth, we had one-on-one conversations with them about the recipes, talking about the ingredients, the steps, the stories behind the process, etc. The book artists came along, drawing as the women spoke. Sixth, we had arts-based workshops to make decisions about the illustrations and general art in the book. Seventh, we had meetings for the book's final decisions. Eighth, we finalised the book edits and published it online. Ninth, we had a final workshop at a local restaurant with formal chefs, to prepare some food and share the printed copies of the book among them."

Advocacy to influence policy

Advocacy involves the deliberate attempt to influence decisions, policies and resource allocation, typically by individuals and structures in positions of power, through the use of evidence, argument, relationships and public advocacy. It does not work in isolation; rather, you should consider it a key element of a more holistic process that seeks to bring about change. And if you want to achieve long-lasting change, you should always amplify the voices of those most affected rather than speaking for them in ways that entrench power imbalances.

[13] Ixqii' Ajtz'utjilaa', Reanda Sapalú, D. A., & Cabrera Pacheco, A. J. (2025). Mujeres Tz'utujiles: Recetas para la recuperación en Chuk Muk. Edinburgh Diamond. https://doi.org/10.2218/ED.9781836451259

Advocacy operates across multidimensional levels, and evidence rarely flows in just one direction. At national level, evidence can inform biodiversity strategies and action plans, land use and environmental legislation, budget allocations and gender machinery within environment ministries, so national advocacy can involve engaging with parliamentarians, regulatory agencies and national delegations that are preparing international positions. At global level, through multilateral processes, for instance, such as the CBD and its Gender Plan of Action, and instruments such as the Convention for the Elimination of All Forms of Discrimination Against Women (CEDAW) — advocacy seeks to influence national legislation (at both adoption and implementation levels) and financing. But the best advocacy tactics operate in both directions: robust national evidence and community testimony can bolster a country's global negotiating position, while global commitments can empower national advocates to drive change domestically.

It is important to note that the ongoing pushback against gender equality and biodiversity work influences the way we approach and develop advocacy. Anti-gender coalitions are increasingly contesting gender-related language in multilateral negotiations to promote what they consider traditional family values, seeking to remove or dilute references to gender in environmental, climate and sustainable development texts. Weakened language helps weaken the agreements that guide implementation at national level. There has been a rise in anti-feminist rhetoric and illiberal movements that use disinformation and harassment to silence feminist and women's rights claims in these spaces and forums. At the same time, funding for gender equality work is contracting sharply and grassroots voices are facing increasing difficulties in accessing global advocacy spaces due to funding, administrative and travel limitations.

For those working at the intersection of gender and biodiversity, this has two implications. First, advocacy cannot only seek to secure new commitments; it must also be defensive, which means protecting agreed language such as the recognition of women's rights and their participation in the KM-GBF ensuring meaningful women's participation in negotiation rooms and so on. Second, evidence becomes even more critical as attacks on frameworks often rely on misinformation and misrepresentation, claiming that gender measures impose foreign ideologies or are unrelated to environmental outcomes. Rigorous, community-based evidence showing how women's knowledge, tenure security and participation can improve biodiversity outcomes is one of the most effective ways to counter such attacks, precisely because it is locally rooted and politically harder to dismiss.

Box 20. Taking local data into the CEDAW Committee space: submitting a shadow report in Guatemala

Contributed by: Eva Hershaw and Maria José Guerra (ILC)

Supported by ILC, Guatemala's National Land Coalition (NLC) collected data using LANDex, a land governance monitoring tool developed by ILC with its members. Afterwards, the team identified an opportunity to submit a shadow report to the CEDAW Committee.

The NLC consolidated what was known at the time as the Gender Committee, composed of at least one representative from each organisation making up the NLC. Together, they thoroughly reviewed different sources of data, including official data, Sustainable Development Goal data, LANDex and other sources of citizen data.

After compiling the missing data gathered from official statistics and qualitative exercises involving rural women, they drafted the report, divided into three core themes:

1. Land access for rural, Mayan, Garifuna, Xinka, African-descendant and *mestizo* women
2. Participation of rural, Mayan, Garifuna, Xinka, African-descendant and *mestizo* women in decision-making spaces
3. Criminalisation and access to justice.

The Gender Committee submitted this shadow report to the CEDAW Committee and, during the session to define the list of issues and questions, its delegate delivered a short intervention focusing on expected state responses, highlighting measures adopted to guarantee non-discrimination, the protection of life and integrity and access to justice for rural, peasant and Indigenous women and rural women human rights defenders.

Later, a woman representative from the NLC travelled to Geneva with an ILC team member to present updates on the report and address pending issues following the state's written response during the tripartite (committee, state and civil society) dialogue session. The report was updated and the delegate spoke again, focusing her comments on the importance of land access and the criminalisation of human rights defenders.

The women of the Gender Committee led this process, from defining themes and priorities, to collecting data and participating in focus groups, and representing and framing interventions in CEDAW committee spaces. The role of the NLC facilitator and ILC data team was limited to technical support on request. This approach gave the Gender Committee a powerful tool for national-level advocacy and allowed them to carry NLC Guatemala data and recommendations into the CEDAW space. It can be replicated in any country where there is space to follow the CEDAW participation pathway.

Popular education

Popular education transforms gender and biodiversity data, changing it from something done to communities into something they produce, understand and own. When projects set joint objectives with communities from the outset, accessible participatory methods replace extractive communication and the process is designed to withstand a hostile political environment, data cease to be an exploitative exercise and become a shared community instrument for change. The following tools can be part of popular education processes:

- **Community mapping and walks**: women and men map resource use separately, then compare maps, revealing gendered differences in who uses and depends on which species, plots or water points
- **Photovoice and drawing exercises**: participants photograph or illustrate environmental change, then collectively analyse the images and attach data to them
- **Forum or street theatre**: replay scenes depicting data-based problems with the audience intervening, to rehearse how evidence can be argued in real situations
- **Community radio and podcasts**: translate findings into drama, songs and interviews in local languages, reaching audiences beyond literacy.

When applied to gender and biodiversity data, this approach democratises evidence, teaching people to read and question the data used to make decisions about forests, fisheries, seeds, land and other natural resources. It also improves the data quality for example, when women and other marginalised groups interpret findings collectively, they can correct mistakes, add essential context and contribute knowledge that standard surveys routinely overlook, such as traditional crop varieties and seasonal wetland use. Finally, it builds lasting capacity by equipping communities with the skills to read, question and communicate evidence, which remain in place after a project ends.

Box 21. Documenting women's contributions to conservation in CONAP
Contributed by: Marina Leticia López (Consejo Nacional de Áreas Protegidas, Guatemala)

This initiative was run by CONAP (the National Council of Protected Areas of Guatemala) to address the lack of representation of women in environmental management in national parks and reserves, and adequately recognise their contributions. CONAP collected information from project sites, recorded and compiled that information, and then created and disseminated a final product.

To collect the information, CONAP held a four-hour group meeting using flip charts and recording equipment at each site, with regional gender liaisons collecting testimonies from women park rangers. The project produced an educational booklet and documentaries which take specialised, technical conservation work and make it available to non-specialists in plain terms.

All aspects of this project were based on the experiences of women working as park rangers, including their successes and failures, documented using a lens of gender, intersectionality and human rights. The methodology targeted identifying efforts initiated by women, to encourage more women to participate in environmental decision making.

This model may be used or adapted in other regions as they seek to visually document the contributions of women to conservation using participative communications models that centre on rights and intercultural understanding.

Visual tools that speak to everyone

It is important to bear in mind that a report or table of figures, however well researched and substantiated, does not attract as much attention as a well-designed chart, infographic, map or other visual. A well-constructed visualisation can tell a story that would require an entire paragraph to describe. Visualisations can also be applied to a wide range of media (technical documentation, presentations, social media, press releases or guidance notes), all of which can all be used in the context of research on gender and biodiversity.

Given this field of research is extremely complex and multidimensional both by its very nature and due to the many factors at play, visual tools can provide a vital bridge between the data generated by research and practical action. But this must not be at the expense of leaving room for the imagination. Poorly designed images can obscure trends, mask inequalities and/or perpetuate stereotypes that the underlying data seek to deconstruct. For example, an infographic depicting women merely as firewood gatherers obscures the fact that they may also be decision makers.

These types of visualisation help make the invisible visible and recognise women's role as holders of traditional knowledge and experts in the field. When you disaggregate data, clear trends often emerge that only become apparent with visual representation. For example, young women livestock keepers face very different challenges around land tenure from older women. Graphs, infographics, maps and other visual aids can also highlight gender-related land use patterns. For example, you can use maps to show where women gather medicinal plants and how they access areas subject to land tenure arrangements that differ from those of men. You can also use visuals to document vulnerability or resilience. Combining spatial layers — such as flood zones, land degradation hot spots and so on — with gender data provides insight into who bears the brunt of environmental or climate shocks. People remember visual information much longer than they remember text-based information and well-designed materials can easily spread via social media. You can also use visuals to reduce journalists' need to interpret complex data.

Box 22. Ecological zonation-based biodiversity vulnerability assessment for gender-responsive coastal resource management

Contributed by: Joy Oluwatomi Folorunso (Nigerian Institute of Social and Economic Research (NISER), Nigeria)

This assessment in three southwestern Nigerian states, Lagos, Ogun and Ondo, studied 56 coastal localities across four ecological zones: coastal vegetation, mangrove forest, freshwater swamps and deltaic wetland ecosystems. This approach enabled the researchers to identify areas of high biodiversity value while assessing the extent of human pressure on these environments, the vulnerability of local people's livelihoods and the management of coastal ecosystems through zonation, which is based on the results of ecological assessments, as opposed to administratively determined zoning.

To incorporate gender-disaggregated data into the analysis of biodiversity loss and the differential impacts of environmental changes on women and men, the researchers included data on women's experiences in processing fishery products, collecting water, using resources in the household and their knowledge of local environmental changes. The analysis highlighted differences between women and men in the degree of exposure, vulnerability and adaptive capacity throughout. The resulting recommendations therefore reflected the experiences of both women and men.

Taking findings to public spaces

When you present your research in a public space (such as a press conference), give an interview to the media or speak at a public forum, your months of work are finally brought to the attention of a wide audience; or it may simply go unnoticed. To avoid your report simply gathering dust on shelves, your data must reach the journalists, policymakers, funders and other movements working on related causes all at once, as this is what gives your data a voice, a face and a story.

Generally speaking, public events for sharing research findings favour simplicity and compelling storytelling. But three key areas require careful consideration when planning such an event:

- **Who presents the data/conveys the message?** Where possible, try to involve women, preferably from the communities represented by the data, as experts or analysts. Do not use them solely as examples, case studies or beneficiaries; rather, make sure your speakers, panellists and interviewees accurately reflect the content. For example, a panel consisting exclusively of men presenting on women's right to job security would undermine credibility long before the message is even conveyed. But do not settle for token representation: speakers must have genuine knowledge of the subject and be given sufficient time to prepare.
- **Ensure your gender analysis is evident throughout the presentation of the data, not relegated to an appendix**. Frame your conclusions around issues of rights, agency, participation and decision making, rather than limiting yourself solely to issues relating to the vulnerabilities or difficulties faced by women. Ensure that press releases and speakers' notes do not contain stereotypical language that objectifies women in a sentimental way or erases them from the discourse.
- **Identify who stands to gain and who stands to lose.** Public exposure carries unequal levels of risk. Women who speak out publicly on land rights, resource-related conflicts or gender discrimination may face harassment, damage to their reputation or hostile reactions from communities, while men sharing similar experiences will not suffer such consequences. It is therefore essential to obtain explicit, informed and concrete consent. Where possible, consider referring to community members collectively, provide stakeholders with information on digital and physical safety, and draw up a protocol for responding to any attacks against them. Organisations that enable community members to participate in media engagements have a duty to protect them afterwards.

Journalists act as intermediaries between your data or evidence and the public; most do not have in-depth knowledge of the links between gender and the environment or your specific topic. Raise their awareness by organising interviews with your experts before publication and creating resources that provide access to technical information, such as fact sheets, plain-language summaries and spokespersons who can describe complex datasets in a single sentence. Where press freedom is restricted, prioritise national, community and diaspora media alongside international media, and bear in mind that, in many contexts where this work is undertaken, radio is the medium with the widest audience.

Box 23. Attracting the interest of local and regional media, communities and policymakers through public events

Contributed by: Berta Gladys Medrano Mejía (GAIA Association, El Salvador)

The GAIA project is based in El Salvador, within the RBTF, one of Latin America's few trinational biosphere reserves, covering parts of El Salvador, Guatemala and Honduras. GAIA pursues three main objectives to combat the decline in biodiversity caused by the lack of effective environmental governance and low levels of awareness regarding the role of women in protecting and conserving biodiversity, by organising public events designed to attract the interest of local and regional media, communities and policymakers.

The project organised structured press conferences as part of its public events strategy, highlighting the role of women in defending biodiversity and drawing on evidence-based research to support multilevel advocacy focusing on women's empowerment, capacity building, community engagement and sustainable land use and/or territory conservation.

The planning for each event involved identifying the venue(s), times and dates likely to maximise media coverage. For each event, the team had to compile a list of national and international media outlets, issue press releases and follow up by telephone to confirm media attendance. As well as providing information through presentations, answering questions and providing interviews at the events, designated spokespersons undertook interview rounds before and after each event, securing publicity on television, radio and in the print media.

Reports and policy briefs: essential instruments for advancing gender-just biodiversity action

Reports, analysis papers, briefing notes and similar communication tools are essential for building coalitions that promote sustainable development. They play an important role in bringing together individual advocacy efforts into a cohesive force, developing common ground among coalition members to enable coordinated action, providing educational and training materials for new advocates (as well as ongoing training for existing advocates) and preserving institutional memory over time, particularly during negotiations with governments. When these communications materials establish a link between gender justice and biodiversity conservation, they encourage more people to join the effort to ensure social and environmental justice.

Such communication tools translate research findings into concrete recommendations for government officials, diplomats, negotiators and decision makers at all levels. They highlight links between environmental degradation, inequalities and, for example, the abuse of power or gender stereotypes. By highlighting lived experiences, Indigenous knowledge systems and community-led monitoring, they document and validate evidence of environmental degradation and can offer concrete solutions. Much of the evidence comes from women and girls in rural or remote communities and Indigenous and African-descendant women and girls, who are often overlooked in official data collection systems. Documenting and sharing this information in reports helps ensure that the perspectives of those who would not normally have a say in decision making are heard.

Guidance notes have been particularly successful in influencing multilateral environmental agreements, for example at CBD COPs to persuade negotiators to include gender justice in the KM-GBF. These brief submissions can offer specific drafting suggestions for the agreement, aimed at avoiding language that would reinforce inequalities against women, while promoting provisions that recognise women as managers and custodians of natural resources and traditional knowledge.

Box 24. Sharing findings from a gender-responsive livelihood mapping and socioeconomic assessment in industrialising regions in India

Contributed by: Suresh Govindapuram (Krea University)

Implemented in the Sri City Special Economic Zone in Andhra Pradesh, the project 'Gender-Responsive Livelihood Mapping and Socio-Economic Assessment in Industrialising Regions' aimed to empower women economically while safeguarding their livelihoods against a backdrop of rapid industrialisation. The project included policy-oriented summaries, community discussions, and research outputs that aimed to provide gender-sensitive development planners and other professionals with the knowledge they needed to devise inclusive livelihood strategies in peri-urban areas undergoing major economic transformation.

As well as compiling datasets disaggregated by gender, qualitative data illustrating the livelihood challenges faced by women and empirical evidence demonstrating the existence of gender-related barriers that prevent women from accessing training and finance, the researchers made policy recommendations to promote equitable livelihood planning.

The study can be replicated in other special economic zones, industrial corridors, manufacturing hubs or areas experiencing rapid urbanisation due to changes in land use, migration or employment growth in the informal sector, where women play a vital role in building community resilience through their microenterprise activities.

A note on digital activism through social media

The rise of social media offers an extraordinary opportunity to promote biodiversity work through a gender lens and to broaden the space for expression for people who have historically been excluded from environmental governance processes. Increasingly, women-led biodiversity initiatives are using several different social media platforms strategically to achieve specific objectives. For example, instant messaging apps can be used in parts of the world where internet access is severely limited, enabling coordinators to communicate securely with one another; they can be used to advocate for policy changes at events such as the CBD COP. Visual formats such as short videos or posts are increasingly being used to engage a younger audience through storytelling.

But online spaces have also become arenas for confrontation against a backdrop of growing polarisation, particularly on issues of gender, the environment and development. To optimise their social media use, feminist rights initiatives must prioritise platforms that meet the community's needs, implement rigorous safety protocols to protect vulnerable participants, combine online organising with offline actions that lead to concrete results and commit to continuing to amplify marginalised voices.

Despite an increasingly complex context, digital communication can be much more than a mere promotional tool: it can constitute a fundamental process that redefines what knowledge is considered in environmental governance processes and can help to create genuine networks of communities ready to mobilise both within and beyond the digital world.

Common challenges

Across the different stages of generating, managing, analysing, using and communicating gender and biodiversity data, the baseline identified the following set of interconnected challenges that affect both the quality of evidence and its ability to inform policy and practice:

Meaningful participation: women and communities are not always meaningfully involved in determining what data are needed, how they are generated or how findings are interpreted and used. Participation can remain limited to providing information rather than extending to decision making over research priorities, methodologies and the use of findings.

Quality and capacity: limited technical and institutional capacity, weak data management systems and gaps in coordination can affect the quality, accessibility and sustainability of gender and biodiversity data. These constraints are often compounded by limited resources and short-term project cycles.

Language and terminology: language can affect participation, data collection and access to findings. There are also different understandings of terms such as gender-sensitive, gender-responsive, gender-transformative,[14] gender equality and gender justice.[15] This can result in gender considerations being incorporated in ways that are procedural or superficial, without addressing underlying inequalities and missing the opportunity to change perceptions of women as active agents of social change, rather than passive beneficiaries.

Funding and resources: limited and short-term funding can constrain the ability of women-led organisations and CBOs to sustain data collection, strengthen management systems, build capacity and engage with policy processes over time.

Ethical considerations and data protection: data protection and security are cross-cutting concerns, particularly when working with women environmental human rights defenders, gender-based violence, vulnerable communities or people living in conflict-affected regions. Risks relating to privacy, consent, anonymity, ownership, storage, access and subsequent use or sharing of data need to be considered throughout the process.

Follow-up and evaluation: data initiatives do not always include follow-up and evaluations of the impacts of initial assessments. This makes it difficult to understand how findings are subsequently used, whether they influence policy or practice, the impacts they generate and any further support or action required.

Systemic barriers to recognition and influence: communities, and the women within them, may face structural barriers to being heard and recognised as legitimate producers of knowledge and data. They often lack access to official data systems and the institutions and decision-making spaces where biodiversity evidence is considered. At the same time, their data and knowledge may not be recognised as legitimate or may not meet the formats, standards or requirements of formal systems. Strengthening gender-responsive biodiversity data therefore also means addressing barriers to participation and access, and creating pathways for recognising community- and women-led data and knowledge, connecting them to national data systems, and ensuring they are considered in biodiversity planning, monitoring, reporting and decision making.

Gap between data and influence: the existence of data does not automatically translate into its use or influence. Even where women-led organisations and CBOs generate relevant and high-quality evidence, barriers to technology, resources, networks and policy spaces can prevent that evidence from reaching the actors and processes where biodiversity decisions are made.

[14] UNGEI. Gender Transformative Education Glossary. www.ungei.org/gender-transformative-education-glossary; IGWG (2017) Gender Integration Continuum. https://prevention-collaborative.org/knowledge_hub/gender-integration-continuum/
[15] Wong Pérez, K and Nicolini, G (2024) Moving towards gender justice. IIED backgrounder. www.iied.org/22296iied

Recommendations

Addressing the challenges identified here requires moving beyond efforts to simply increase the availability of gender and biodiversity data and paying greater attention to the conditions under which data are generated, managed, protected, communicated and used, and to the pathways through which evidence can influence biodiversity policy and implementation.

This includes strengthening the capacities and resources of women-led organisations and CBOs, embedding gender-responsive approaches within established data systems, and creating stronger connections between community-generated evidence and national and global biodiversity processes.

The recommendations below are largely addressed towards all gender and biodiversity data initiatives, including those which are led by women's organisations and CBOs, institutions and independent researchers. Some of these recommendations are also relevant for policymakers at national and global levels. We therefore recommend that gender and biodiversity initiatives:

- **Consider data use and communication from the outset.** Do not treat data use and communication as an afterthought or the final stage of a research process. Instead, consider intended audiences, advocacy objectives and policy priorities from the outset, as these can influence the questions you ask, how you collect and analyse data, and how you communicate your findings. Considering data use, reuse and uptake throughout the research process can increase the likelihood of your evidence being accessible, relevant and able to contribute to tangible changes in policy and practice.

- **Establish robust data protection and ethical frameworks.** Develop and apply ethical and robust data protection frameworks, particularly when working with vulnerable communities, in conflict-affected settings or on sensitive issues such as gender-based violence. Ensure you have protocols to address informed consent, confidentiality, anonymity, secure storage, access, ownership and responsible data sharing and reuse, and use them throughout the different stages of working with data, not just after data collection.

- **Reinforce intersectional approaches to gender and biodiversity data.** Gender and biodiversity data should reflect the different and intersecting realities in which people live. Gender intersects with age, sexuality, ethnicity, class, disability, livelihood and other forms of social and structural inequality. Apply an intersectional approach to avoid treating women as a homogenous group, identify groups that may otherwise remain invisible in datasets and ensure evidence and policy responses do not reproduce existing exclusions.

- **Incorporate gender-responsive methodologies into national and global frameworks.** Aim to embed gender-responsive approaches within established biodiversity data monitoring and reporting frameworks and systems including national biodiversity monitoring and relevant global review mechanisms to help address persistent gaps in gender and biodiversity data, and create more systematic opportunities for this evidence to inform implementation and reporting.

Box 25. Policy practice box: connecting citizen-generated data with official data systems

The **United Nations Collaborative on Citizen Data**[16] is one mechanism for strengthening the inclusion and recognition of citizen-generated data within official data systems. It is a global multistakeholder initiative that brings together national statistical offices, CSOs, research institutions, human rights institutes, and regional and international partners to promote more inclusive, accountable and effective data systems.

For gender and biodiversity data, approaches such as this can provide an entry point for strengthening connections between evidence generated by women-led organisations, CBOs and official data systems. Such mechanisms can help create pathways for community-generated evidence to be recognised and considered alongside other sources of evidence in biodiversity monitoring, reporting and decision making.

- **Strengthen the connection between evidence and decision making.** To ensure women and communities have opportunities not only to generate data but also to interpret findings and participate in the spaces where evidence is considered, address barriers related to technology, language, institutional access and policy participation, and create clearer pathways for evidence to contribute to biodiversity planning, monitoring, reporting and implementation.
- **Invest in sustained and flexible resources.** Funding should support the different needs involved in generating, managing, analysing, communicating and using gender and biodiversity data. Longer-term and flexible funding enables women-led organisations and CBOs to sustain monitoring, strengthen institutional systems and engage consistently in national and global policy processes.

[16] https://unstats.un.org/UNSDWebsite/citizen-data

Acronyms

AI	Artificial intelligence
CAED	Support Centre for Evaluation and Development (Cameroon)
CBD	Convention on Biological Diversity
CBO	Community-based organisation
CEDAW	Convention for the Elimination of all Forms of Discrimination Against Women
CONAP	National Council of Protected Areas (Guatemala)
COP	Conference of the Parties
CSO	Civil society organisation
DRC	Democratic Republic of Congo
FGD	Focus group discussion
FPIC	Free, prior and informed consent
GIS	Geographic Information Systems
GPS	Global Positioning System
GYBN	Global Youth Biodiversity Network
IIED	International Institute for Environment and Development
ILC	International Land Coalition
KM-GBF	Kunming-Montreal Global Biodiversity Framework
NBSAP	National biodiversity strategy and action plan
NISER	Nigerian Institute of Social and Economic Research
NLC	National Land Coalition (CNT= Coalición nacional para el acceso a la tierra)
OPED	Organisation pour la Protection de l'Environnement et le Développement (DRC)
OTVI	Okedejapah Trauma Victims Initiative (Nigeria)
PAR	Participatory action research
PRA	Participatory rural appraisal
RBTF	Trifinio Fraternidad Transboundary Biosphere Reserve (El Salvador, Guatemala, Honduras)
SWAYA	Society for Women and Youths Affairs (Nigeria)
WWF	World Wide Fund for Nature/Fondo Mundial para la Naturaleza (Colombia)



Participatory mapping to identify what women know, use and manage in the marine-coastal zone, Guatemala (Credit: Marina Lopez Sincal)
See Box 8 and Box 21

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The CBD Women's Caucus (CBD WC) is the women's constituency within the Convention on Biological Diversity (CBD). It stands as a self-organised global platform, supporting women and girls worldwide to advocate for their rights within biodiversity-related decision-making processes across all levels.

CBD Women

The International Institute for Environment and Development (IIED) is a global policy and research organisation that works to promote sustainable development, social justice and environmental protection. IIED collaborates with governments, communities and civil society to generate evidence-based solutions, influence policy, and support marginalised groups, including women and Indigenous communities, in addressing environmental and development challenges.

iied International Institute for Environment and Development