Gender and Biodiversity:

A DATA BRIEF

UN WOMEN | WOMEN COUNT

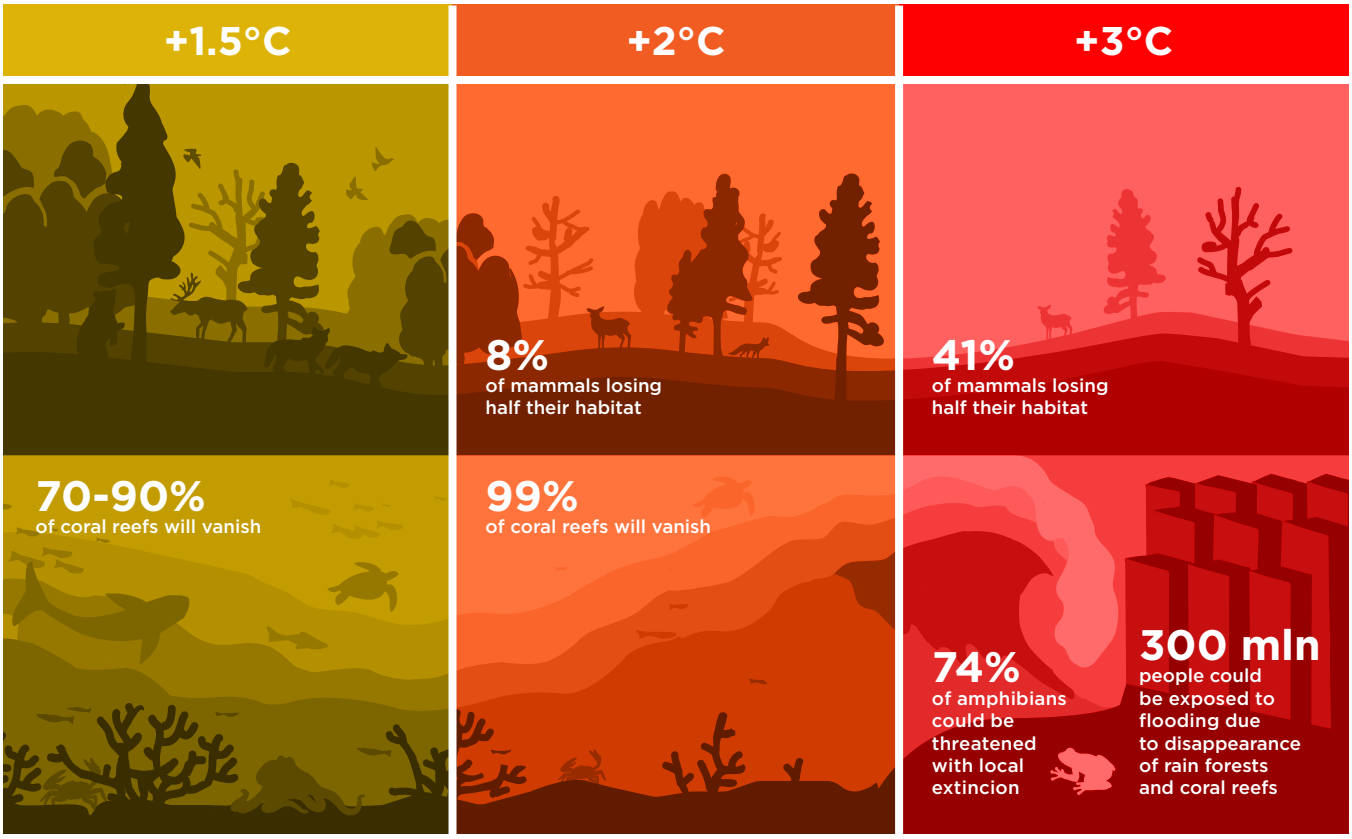
The triple planetary crisis - biodiversity loss, climate change and pollution —is putting human lives and livelihoods at risk and altering all life on Earth. As the variety of plant, animal and fungi species decreases, this loss of biodiversity is exacerbating the climate crisis, leading, for example, to reductions in forests' rain regulating roles and oceans' capacity for carbon capture. Additionally, water, air and land pollution contribute to species loss and accelerate warming (for instance, via greenhouse gases or water sediment from farmland or industry). As a result, ecosystem services are diminishing at increasing rates, putting human health and safety in peril.

This data brief showcases some of the connections between these crises through a gender lens. While not exhaustive and limited by the availability of relevant data, it nonetheless provides important evidence and insights into how gender and biodiversity are intimately intertwined.

Climate change and biodiversity loss

The risk of species extinction increases with every degree of warming. This has important consequences for women and girls. Data is unavailable to generate global estimates for some of these issues but, where it exists, it showcases important gender implications.

FIGURE 1. Risk of species extinction by degree of warming, and examples of predicted gender impacts



EXAMPLES OF GENDER IMPACTS

Habitat loss will affect the subsistence of those who rely on forests, often women. It prompts more human-wildlife conflict and increase the spread of disease, worsening care burdens.

Women, who are more likely to practice onshore fishing and cannot easily change marine harvesting locations, will see impacts on food security and income.

EXAMPLES OF GENDER IMPACTS

Habitat loss will affect people's livelihoods and health. Deforestation correlates with higher rates of vector-borne disease, including malaria, diarrhoea and other health concerns, worsening women's care burdens.

Disappearing reefs lead to loss of income and food insecurity among small-scale fishing communities.

EXAMPLES OF GENDER IMPACTS

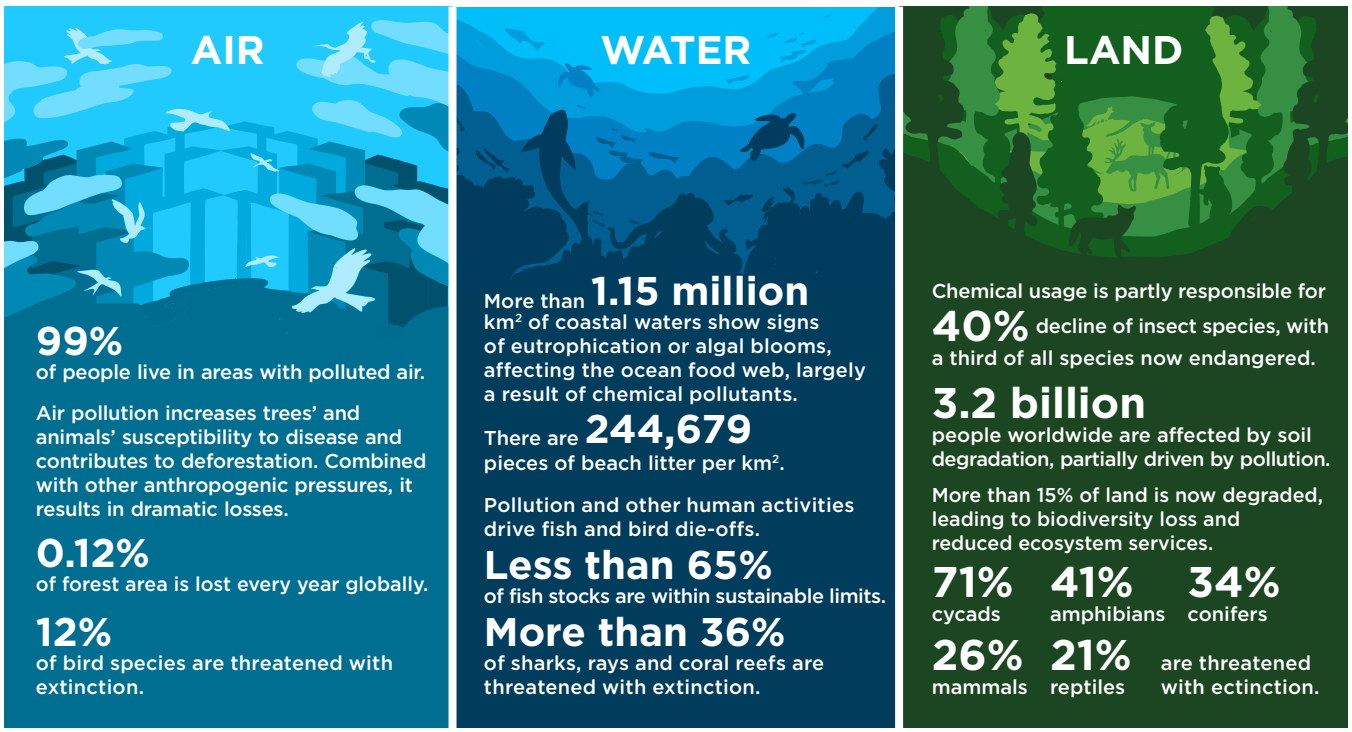
By 2050, an estimated 160 million women and girls will be pushed into poverty, and 240 million into food insecurity by 2050. In addition, conditions such as worsening droughts, expanding aridity, and the increasing unpredictability of rains correlate with higher child marriage and adolescent birth rates, and worsening access to clean drinking water, and clean cooking fuels.

Source: UN Women, 2023. Data driven insights: The Effects of Climate Change on Gender and Development; UN Women, 2022. From commodity to common good: A feminist agenda to tackle the world's climate crises; and UN Women, 2023. Gendered impacts of climate change: Evidence from Asia.

Pollution and biodiversity loss

Pollution has direct impacts on biodiversity. For instance, pesticides may cause death, deformities and reduced plant and animal growth; industrial pollutants change the balance of ecosystems; particulates from combustion processes may cause disease among plants, animals and humans; and solid waste contributes to biodiversity loss through suffocation, entanglement and ingestion. Women and men face different impacts; quantifying these differences is hampered by systemic data gaps.

FIGURE 2. Risk of pollution-related biodiversity loss by type of ecosystem, and examples of gender impacts



EXAMPLES OF GENDER IMPACTS

The livelihoods of those who collect fodder, firewood, animal products and other forest products, many of whom are women, will be affected by degraded forests.

Respiratory and cardiovascular diseases increase with air pollution, worsening women's care burdens. In 2019 alone, an estimated 4.2 million people died from ambient air pollution, and 3.2 million from household air pollution.

EXAMPLES OF GENDER IMPACTS

More than 3 billion people depend on marine ecosystems for their livelihoods. For many women, marine pollution translates into increased food insecurity, as they often give up food in favour of family members during times of scarcity. When freshwater sources are polluted, drinking water collection and treatment times increase. Women are responsible for these activities in 80 per cent of the world's households.

EXAMPLES OF GENDER IMPACTS

Agricultural yield, tourism, forestry and other livelihoods will suffer. As women who rely on these resources are less likely than men to be empowered to successfully diversify their sources of income, they will experience significant losses. Soil-transmitted helminthiases and undernutrition, together with diarrhoea and other pollution-related ailments, cause 1.4 million deaths per year. This figure may increase.

Source: WHO, 2024. Air pollution data portal. United Nations, 2024. Sustainable Development Goals Statistical Annex. IUCN, 2024. The IUCN Red List of threatened species. Maúre et al., 2021. Globally consistent assessment of coastal eutrophication. Nat Commun 12, 6142. UN Women, 2020. Turning promises into action. UNEP, 2023. Pollution action: The missing link in biodiversity protection.

The above connections between gender and biodiversity are well documented in multiple countries, but many indicators lack data to draw global conclusions. The examples below illustrate issues where sufficient data exists to showcase some of these connections across regions.

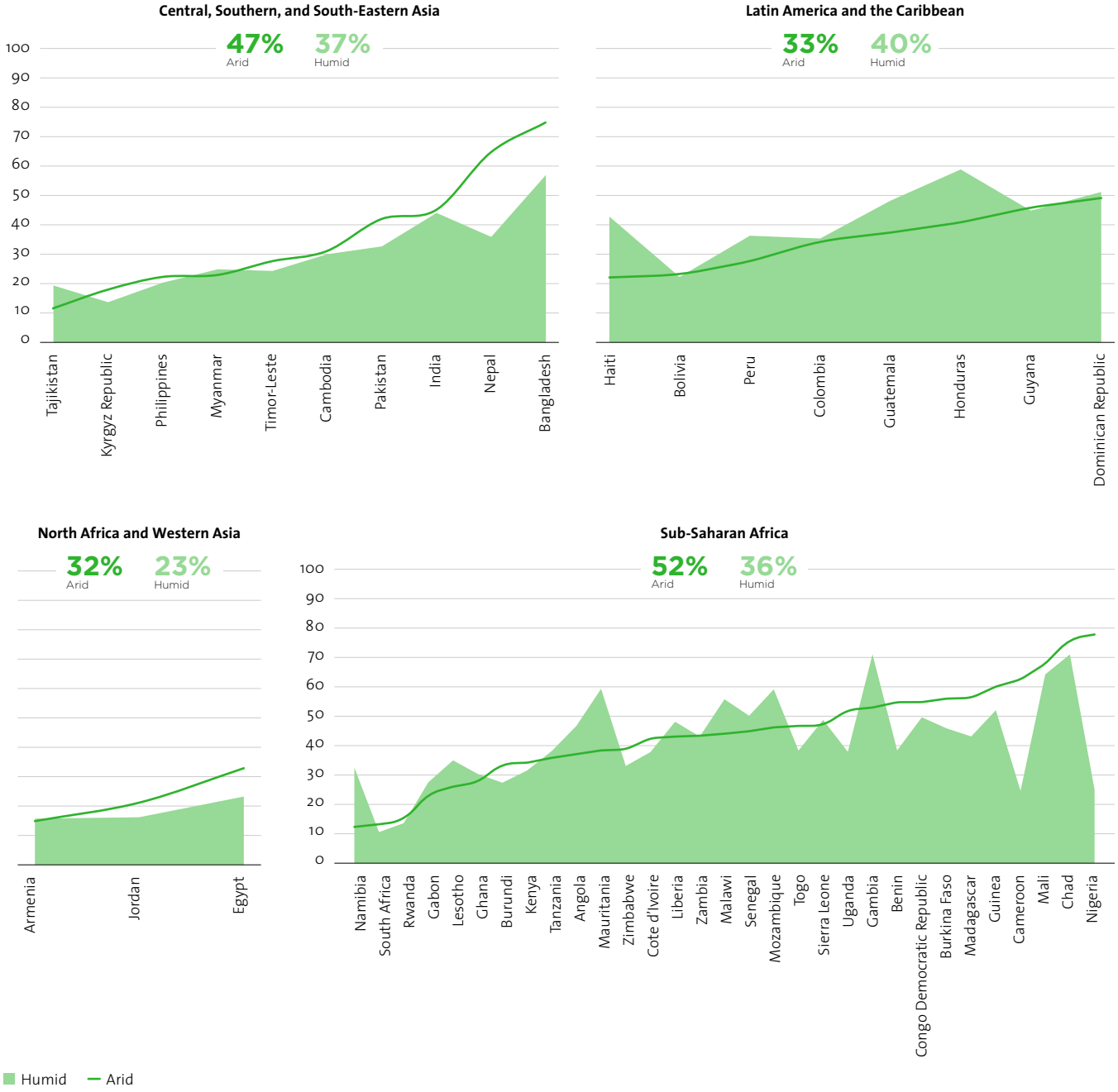
GREEN SPACES

Changes in biodiversity and variations in precipitation and temperature result in different levels of relative aridity, measured as the relationship between atmospheric supply and demand for water (precipitation vs. potential evapotranspiration). Along with anthropogenic warming, human activities are driving global increases in aridity.[1] The positive association between plant and soil microbial diversity (species richness) and the ability of ecosystems to provide multiple functions and services is well established.[2] When biodiversity declines in green spaces, aridity worsens, and so does the yield of forests, pastures and other land, affecting food, water, air filtration, carbon sequestration and many other services. This has tremendous consequences for the planet and for the people who rely on land ecosystems for their livelihoods.

Worsening ecosystem services often translate into livelihood and income loss. For women and girls, in addition to other effects, increasing relative aridity typically correlates with higher child marriage rates, as families struggling to make ends meet may marry off their daughters (Figure 3). In Asia and the Middle East, almost every country with available data has higher child marriage rates in arid areas compared to in humid areas. In Central, Southern and Southeastern Asia, an estimated 47 per cent of women marry before turning 18 in arid areas, compared to 37 per cent of those in humid areas. In Western Asia and the Middle East, these rates stand at 32 and 23 per cent, respectively.[3] In the Africa region, 52 per cent of women in arid areas are subjected to child marriage, compared to 36 per cent in humid areas. The Latin American countries with available data are all relatively humid overall,[4] with their most arid clusters remaining as humid as the most humid clusters in other regions. As such, the effects of aridity are not felt as strongly. Given the lack of data from more arid areas in the region, it is impossible to assess whether this association holds true in Latin America and the Caribbean as a whole.

Worsening climate change and biodiversity loss are expected to result in a global increase in arid areas.[5] Unless preventive measures are taken, this may put millions of women at risk of child marriage, which often leads to adolescent pregnancies, school dropout, lower lifetime income and an overall lack of agency within and outside the home.

FIGURE 3. Proportion of women ages 18-49 who were married or in a union before age 18, by aridity index of dwelling location and SDG regions, latest available year (percentage)



Source: UN Women calculations based on Demographic and Health Survey data and geospatial data from DHS Geocovariates.

Note: The Aridity Index represents the average yearly precipitation divided by the average yearly potential evapotranspiration – a measure of the drying power of the atmosphere to remove water from land surfaces through evaporation (e.g. from the soil and plant canopy) and plant transpiration. "Humid" refers to the top 25 per cent of values; "arid" refers to the bottom 25 per cent of cluster-level aridity values. Although the official Sustainable Development Goal indicator 5.3.1 on child marriage refers to women aged 20–24, this age group would yield an insufficient sample size for this analysis; thus, ages 18–49 were used instead. Aggregates for Sub-Saharan Africa are based on 31 countries; Latin America and the Caribbean aggregates are based on eight countries; North Africa and Western Asia aggregates are based on three countries; and Central, South and Southeastern Asia aggregates are based on 10 countries. As such, some of these aggregates may not be representative of the whole region.

At 0.12 per cent of global forest area loss per year, the impacts on ecosystem services and forest-dependent communities will worsen over time. At present, Central and South America, Sub-Saharan Africa and Southeastern Asia, which are home to the bulk of the world's tropical forests (the most biodiverse of all terrestrial biomes[6]), continue to lose vast amounts of forests annually (Figure 4). Along with pollution and other factors, this contributes to the degradation of almost 16 per cent of the world's land (more than 11 million km^2). Since 2015, the world has been losing at least 100 million hectares of healthy and productive land every year,[7] affecting food, income and water security globally. Key drivers of deforestation include land transition for crops and grazing, urbanization and logging activities.[8]

Among all employed men, 27 per cent engage in agriculture (including forestry and logging), compared to 26 per cent of employed women.[9] Because men are more likely than women to be employed overall, many more men than women engage in agriculture in absolute terms. This renders their income vulnerable to forest loss — and heightens their contributions to it. In almost every country, men are more likely than women to engage in forestry and logging employment specifically (Figure 5). Even when women engage in forestry, work roles are highly gender-differentiated: many women engage in silviculture, administrative duties and gathering non-wood forest products (Figure 6).

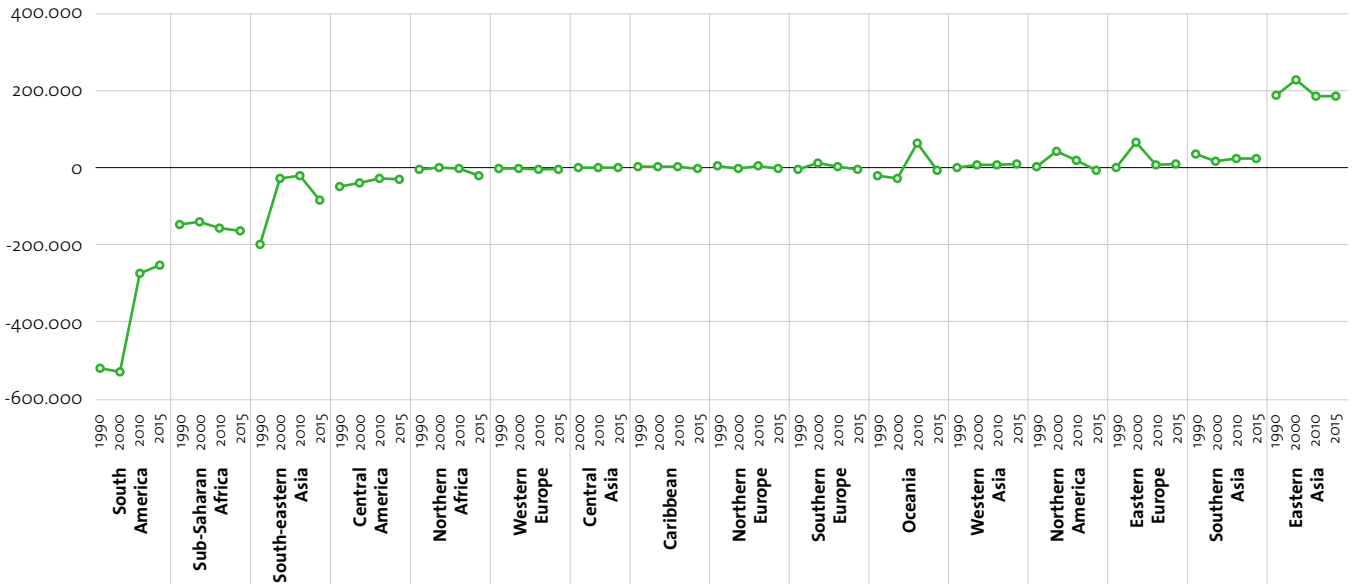
Employment statistics do not capture the full extent of women's dependence on forests, particularly on wild and primary forests. Activities such as charcoal production or fodder collection are often not reflected if they are seen as household chores or subsistence activities. However, millions of women globally depend on these forests for their livelihoods. Where data is available, it reflects their disproportionate dependence on these ecosystems, as, for many of them, forests represent their main or even sole source of income (men are more likely to diversify). In Samoa, for example, as many as 19 per cent of women collecting forest products use wild primary forests to harvest plants and 19 per cent use them for animals, with an additional 4 per cent using them for the creation of cultural products (compared to 14 per cent in plant collection, 24 per cent in animal collection, and 2 per cent in materials for the creation of cultural products in the case of men).

For many of these women, this is their main income source (for 57 per cent of those who collect timber in wild primary forests, 33 per cent of those who do livestock grazing in primary forests, and 29 per cent of those who harvest edible plants and fungi in these forests). Gender differentials can also be observed in the ways in which women and men manage forest products to preserve biodiversity. Across countries with available data, women are more likely to replant or repopulate, while men are more likely to practice fallowing or follow intermittent collection.[10]

As the world transitions towards low-emission economies, it is important to ensure that forest workers — as well as all who depend on these ecosystems for subsistence, tradition, religion or other purposes — are equipped to adapt and engage in forest management meaningfully in ways that are beneficial to humans and that preserve and promote forest ecosystem health. Similarly, ensuring that agriculture-related decisions are made with consideration to ecosystem loss is of key importance to promote the conservation of forests and other terrestrial ecosystems.

Currently, in one-third of countries with available data, less than 50 per cent of women and men have ownership of, or secure rights to, the agricultural land they use, which often results in limited decision-making power regarding the use of pesticides, fertilizers and agricultural practices. Notwithstanding this limitation, men own land at least twice as often as women in almost half of the countries with data (Figure 7). Enhancing women's rights to land and secure tenure of land is not only important to enhance their resilience, but also to enable them to make conservation-related decisions as, in the few countries where data is available, women are less likely than men to use chemical pesticides, fertilizers and growth promoters.[11]

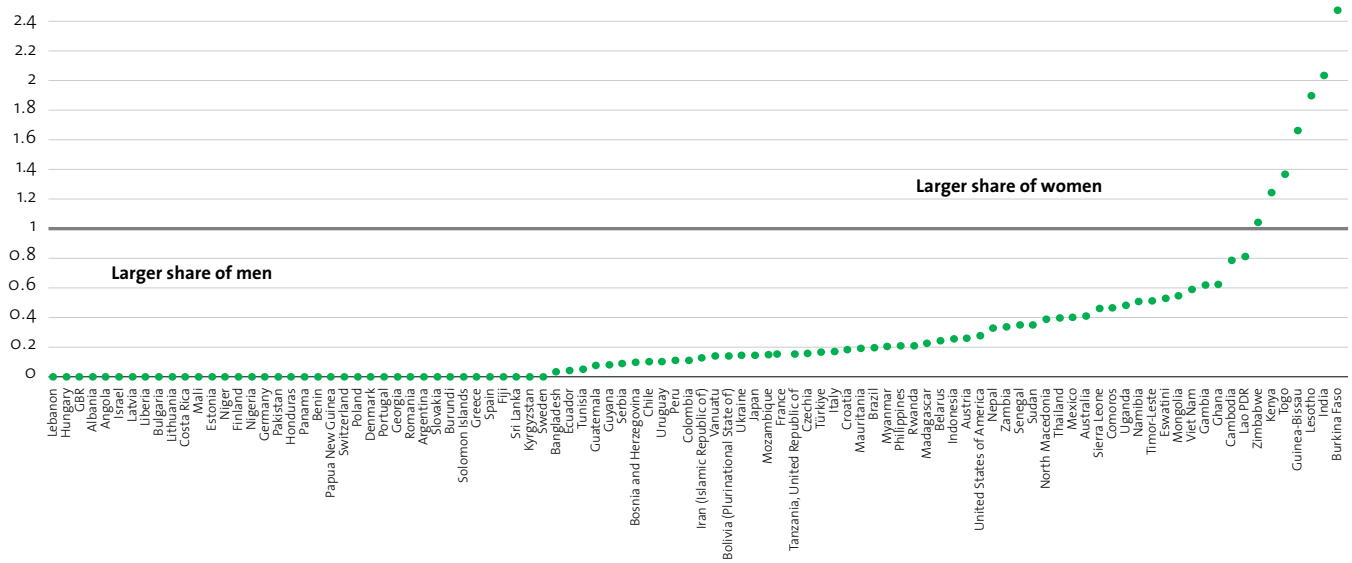
FIGURE 4. Annual net change in forest area over time (difference in forest expansion and deforestation), by region (hectares per year)



Source: UN Food and Agriculture Organization (FAO). Forest Resource Assessment.

Note: The FAO publishes forest data as the annual average on 10- or 5-year timescales since year-to-year changes in forest cover can be volatile. Net change in forest area measures forest expansion (either through afforestation or natural expansion) minus deforestation. Thus, countries with a positive net change in forest area are gaining forests faster than losing them, while countries with a negative change in forest area are losing more forest area than they are able to restore.

FIGURE 5. Gender gap in employment in forestry and logging, by sex, latest available year (women to men ratio)

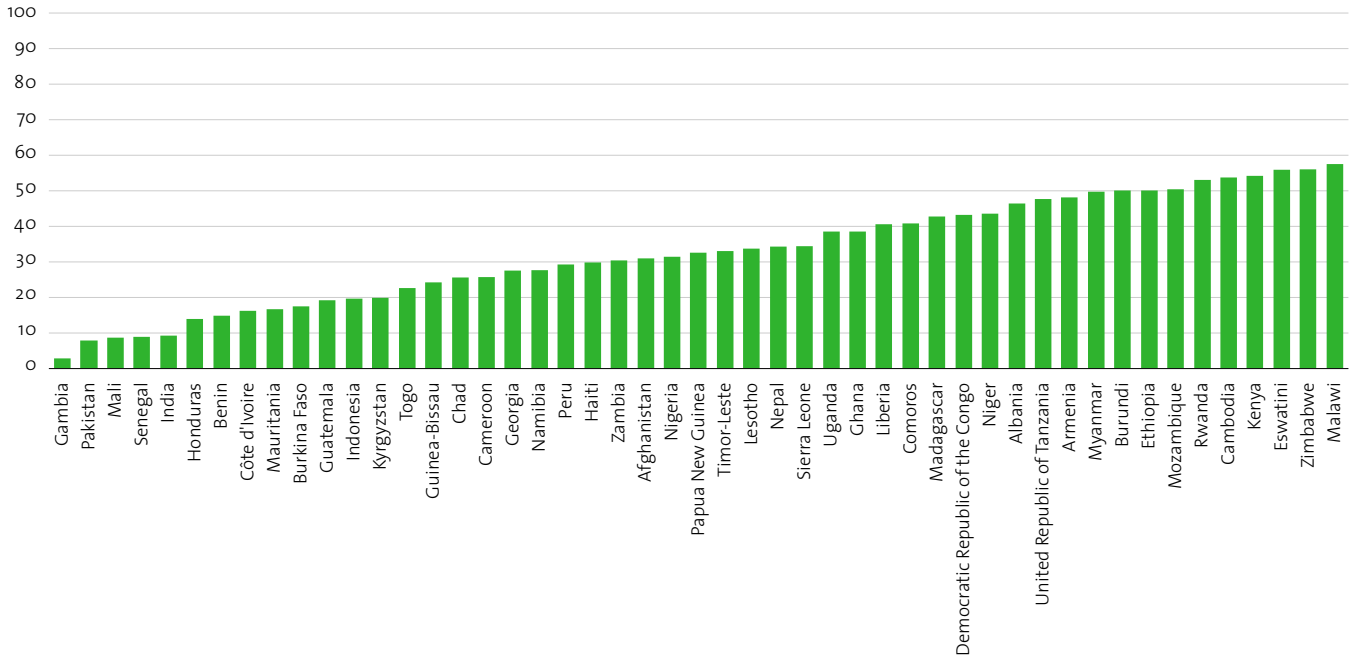


Source: ILOSTAT explorer, last accessed on 12 September 2024.

FIGURE 6. Global aggregate of employment in forestry and logging, by activity and sex, latest available year (percentage)

Source: ILOSTAT explorer, last accessed on 19 September 2024. Note: Data are weighted averages based on International Standard Industrial Classification of All Economic Activities (ISIC Rev. 4) groups for the latest available data in 60 countries, representing 25% of global employment.

FIGURE 7. Share of women among owners or rights-bearers of agricultural land, latest available year (percentage)



Source: United Nations Global SDG Indicators Data Platform (Accessed 18 September 2024)

BLUE SPACES

Water covers 71 per cent of the Earth's surface; almost 96.5 per cent of it is held in oceans, while it also exists as vapour, soil moisture, or in rivers, lakes, ice and aquifers.[12] As such, anthropogenic impacts on the water cycle affect all living organisms. As of 2023, only 56 per cent of Earth's water bodies have good ambient water quality (i.e. their water does not damage ecosystem function or human health). Although 79 per cent of groundwater remains of good quality, only 52 per cent of open water bodies and 50 per cent of rivers do. There is enormous variation across regions. For example, only 33 per cent of rivers in Southeastern Asia and only 10 per cent of those in Oceania are classified as having good water quality levels per nationally defined parameters, whereas 90 per cent of rivers in Europe and North America meet those criteria. In addition, less than 21 per cent of the world's water is used efficiently, putting enormous pressure on this essential resource.[13]

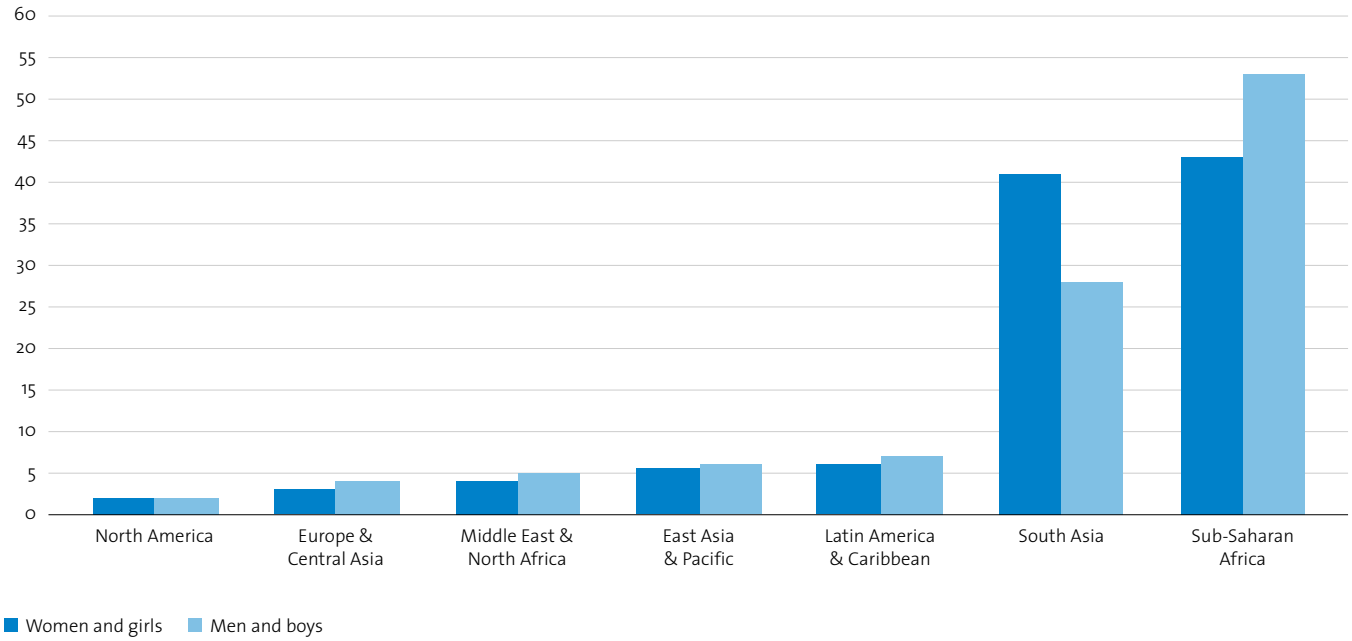
Climate change, pollution, land use changes and unbridled increases in water demand are among the root causes of the world's water crisis.[14,15] The crisis directly affects humans, especially women, through scarcity of clean drinking water, limitations on hygiene, increased unpaid work burdens and diminished livelihoods. More women than men die as a result of unsafe water, sanitation and lack of hygiene (19.1 women and girls for every 100,000, compared to 17.7 men and boys per 100,000, Figure 8). Furthermore, as women are in charge of water collection in 80 per cent of the world's households without access to water on premises,[16] clean water scarcity has direct consequences on their time burdens, including the amount of time they have left to engage in paid work.

The water crisis severely impacts all species and contributes to rapid biodiversity loss across blue spaces. A clear example of these effects is eutrophication, a process caused by high levels of nitrogen and phosphorus in water that encourage algal blooms to proliferate, suffocating aquatic life. Eutrophication can happen in both fresh- and saltwater, usually as a result of agricultural runoff and the overuse of fertilizers. As eutrophication directly affects aquatic food webs, it also has direct consequences for coastal communities that depend on these resources for their livelihoods, food, and even their traditions.

The effects of eutrophication, however, are not gender-neutral. Women engaging in fisheries are more likely than men to practice onshore fishing and less likely to own boats or the sophisticated fishing gear necessary to reach areas beyond eutrophication. In Tonga, for example, 51 per cent of women who practice marine harvesting do so through gleaning or hand collection; in Samoa, this is the case for 72 per cent of women (for men, it is 13 and 21 per cent, respectively).[17,18]

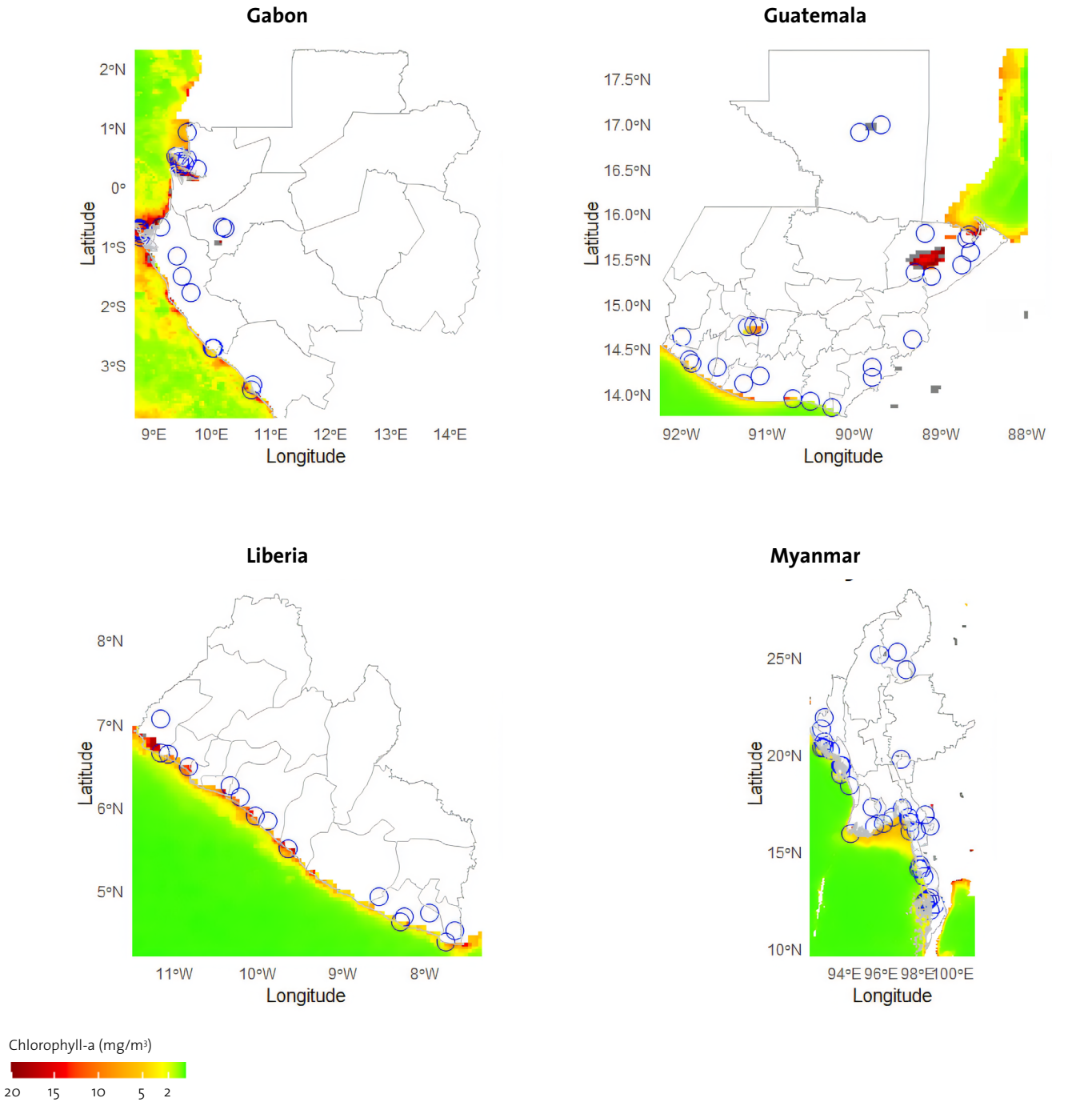
In contrast, men are more likely than women to fish using long lines, nets and other more destructive fishing methods such as trawling and dredging. As such, many women are unable to change fishing locations if their fish catch declines as a result of eutrophication, which translates into food and income insecurity. Furthermore, as a result of social norms, women in many households reduce food intake when food is scarce, in favour of other household member's nutrition. Thus, across countries with available data, women living near areas showing high levels of eutrophication (measured by high chlorophyll-a concentrations) are more likely than other women to experience high levels of anaemia — an indicator that their intake of varied and nutritious food is insufficient. This is particularly true for women living in the poorest households of these coastal communities, which are more likely to rely on fishing and marine harvesting for their subsistence (Figures 9 and 10).

Figure 8. Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene, by sex (deaths per 100,000 population)



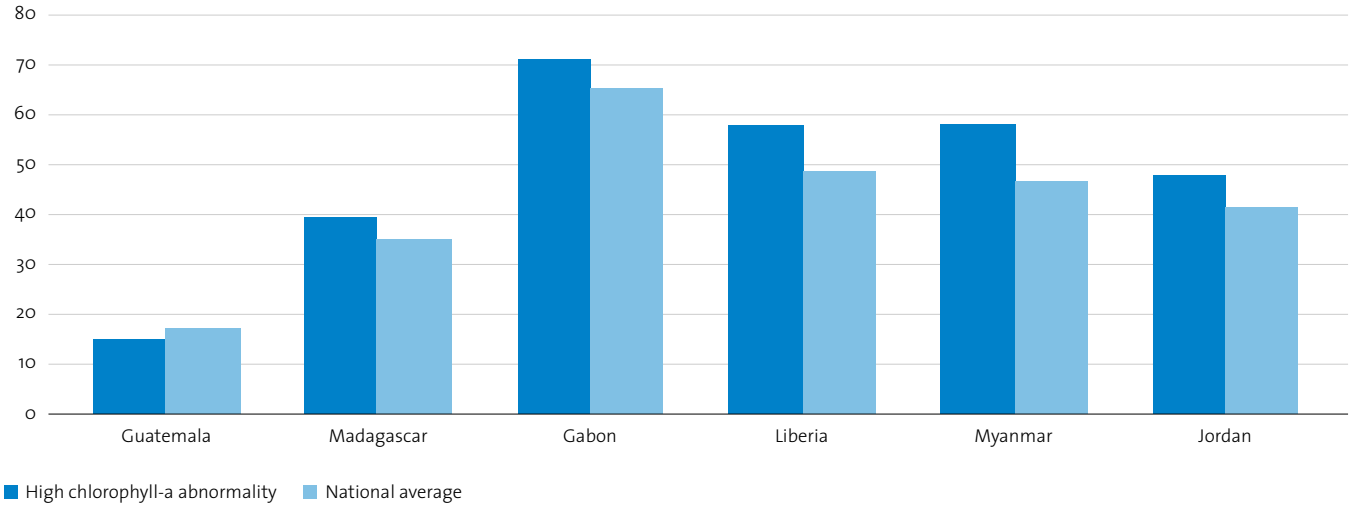
Source: United Nations Global SDG Indicators Data Platform. (Accessed 18 September 2024)

Figure 9. Chlorophyl-a abnormality and coastal locations with high levels of anemia among non-pregnant women living in the poorest households, select countries



Note: The blue markers in the figures depict the proportion of women living in the poorest households in coastal areas experiencing the highest levels of anaemia (clusters with the 25 per cent highest values). This was calculated by integrating DHS's anaemia prevalence data with the chlorophyll-a concentration dataset from NASA's MODIS-Aqua satellite.[19] Sources: Demographic and Health Survey data (latest available year), and MODIS Chlorophyll-a concentration data (2023). The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of UN Women concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Figure 10. Proportion of non-pregnant women aged 15-49 living in the poorest households that have anaemia, by level of chlorophyll-a abnormality in the area where they live



Note: The figure compares anaemia prevalence rates between non-pregnant women ages 15-49 living in the poorest coastal households with high levels of eutrophication, and that of non-pregnant women ages 15-49 living in the poorest households.

Sources: UN Women's calculations based on Demographic and Health Survey data (latest available year), and MODIS Chlorophyll-a concentration data (2023).

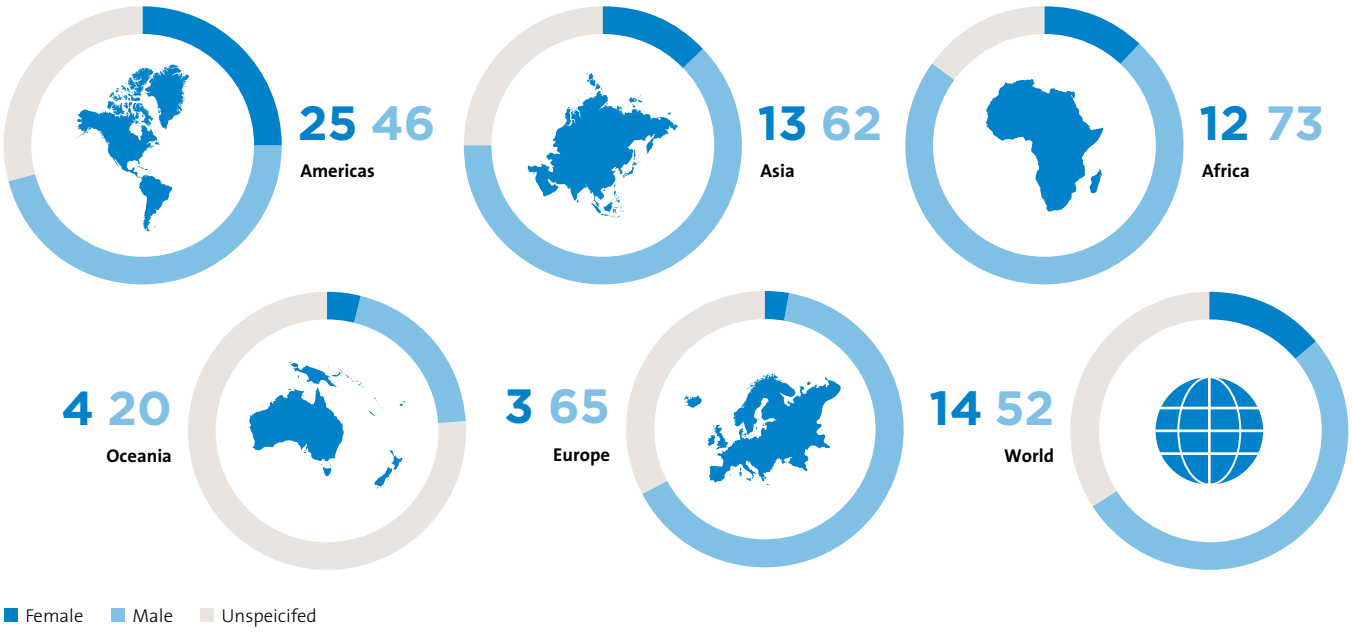
Adding to losses driven by water quality and scarcity, other human activities are also accelerating biodiversity loss in blue spaces, especially in oceans, and may also be contributing to these nutritional differences. Variations in water temperature, salinity, overfishing, habitat destruction, and the introduction of foreign species, compound the losses driven by nutrient concentrations illustrated above. This degradation has direct effects on the livelihoods of women and men engaging in fisheries, which, in turn, impact biodiversity loss in different ways.

Across all regions, men are more likely than women to engage in the primary sector of fisheries for employment purposes (Figure 11). However, women engage in fisheries in additional ways, including informally, for subsistence, leisure, tradition or other purposes. Estimates of the daily time people spend on fishing and aquaculture show that although more women than men engage only part-time or just occasionally in these activities, they nonetheless depend on the oceans and other water bodies for their livelihoods (Figure 12).

Of all related activities, women are more likely to engage as subsistence fishers, trappers, hunters or gatherers (of seaweed and other aquatic flora) or in aquaculture. In contrast, activities such as deep-sea fishing and inland fishing are left almost solely to men (Figure 13). Deep sea fishing, which can employ highly destructive methods, such as bottom trawling, dramatically impacts the habitat of benthic organisms and is a key driver of marine biodiversity loss.[20] Further, when practised beyond sustainable limits, fishing affects marine ecosystems by increasing the mortality of target species, thereby affecting the food sources of other organisms.

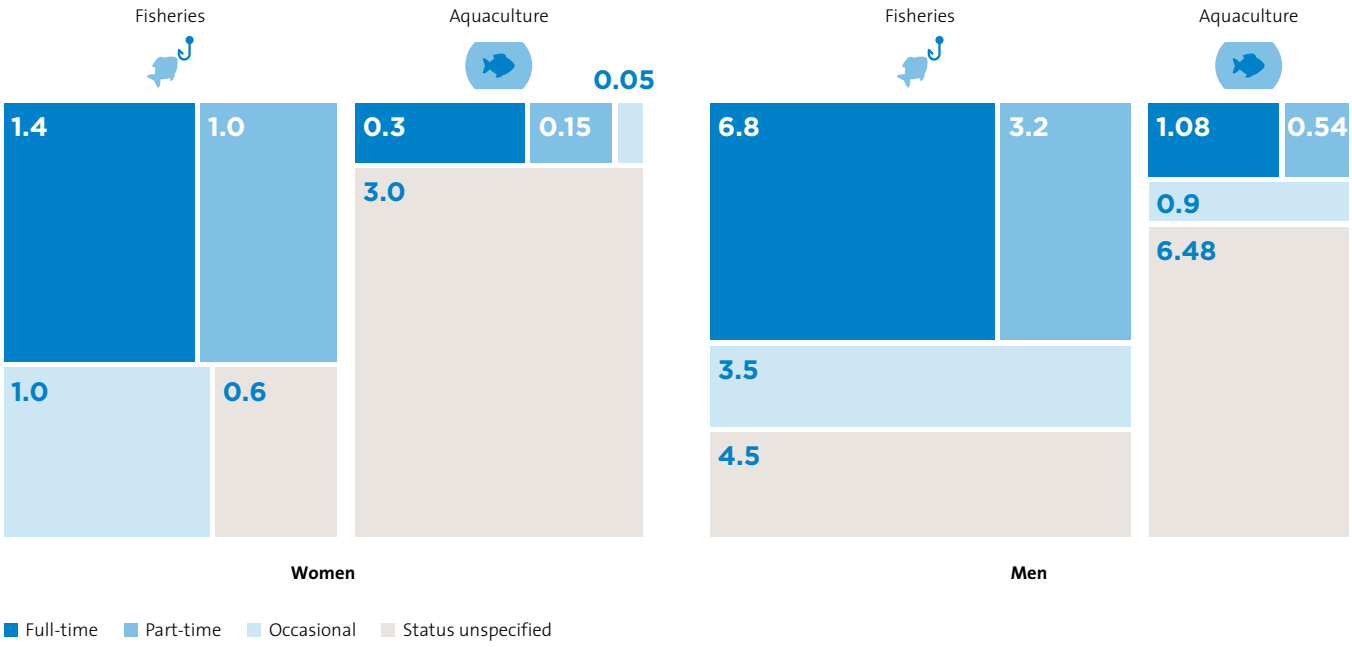
In many cases, fishing practices have led to the elimination or reduction of predator species, thereby affecting the proliferation of others.[21] Coastal fisheries often suffer when fisheries on the high seas are overexploited.[22] In Senegal, for instance, where roughly 50 per cent of jobs in the fishing sector are held by women[23] (largely in food processing in coastal areas), the depletion of fish stocks as a result of trawling, marine ingredient production, climate change and other drivers, is driving up poverty and food insecurity.[24] Therefore, adequately managing commercial fishing on the high seas, including by establishing protected areas and limiting catches, would likely have substantial impacts on coastal populations.

Figure 11. Share of employment in fisheries (primary sector), by sex and region, 2021 (percentage)



Source: FAO. (2024). FAO Yearbook of Fishery and Aquaculture Statistics. Rome.

Figure 12. Number of people working in fisheries and aquaculture (primary sector) based on time-use category reporting, by sex and type, 2021 (Millions)



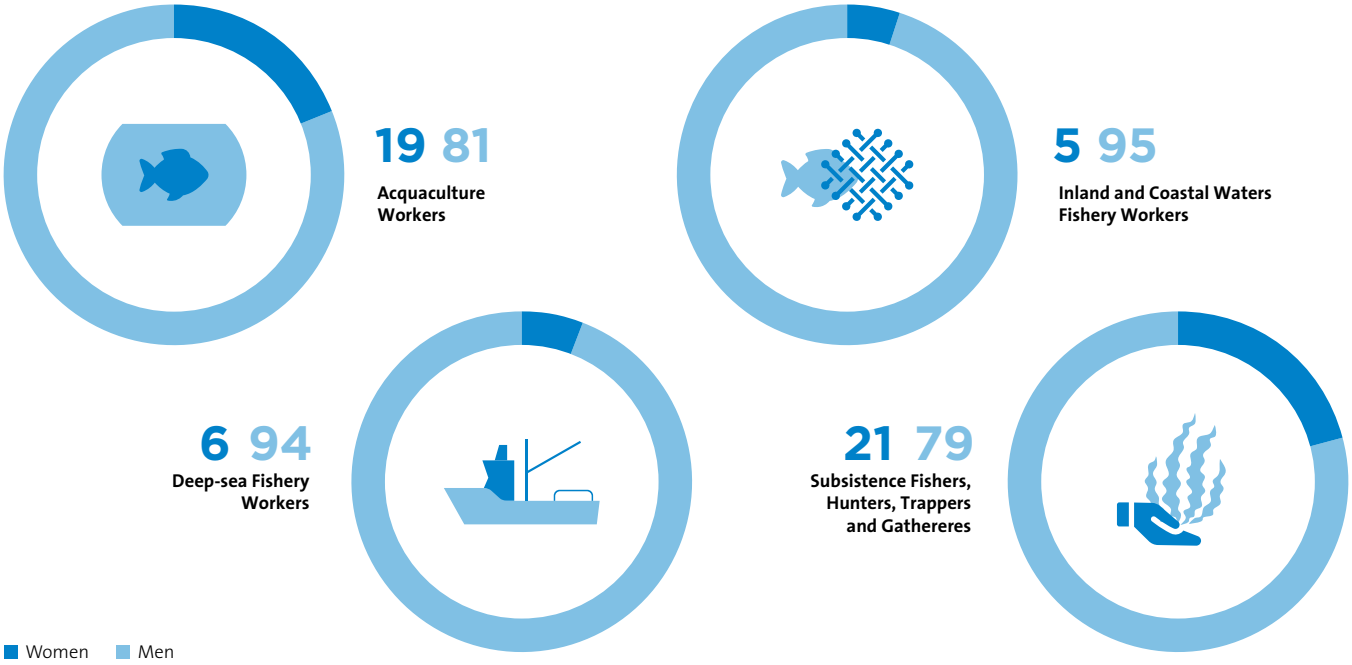
Source: FAO. (2024). FAO Yearbook of Fishery and Aquaculture Statistics, 2021. Rome. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of UN Women concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Coastal fisheries, however, can also contribute to species depletion. Coral reefs, for instance, host an estimated 25 per cent of all marine life[25], and highly destructive fishing methods, such as dynamite or cyanide fishing, are still practised in parts of Southeast Asia, which is home to a third of the world's coral reefs.

In addition, ghost nets, discarded fishing gear and coastal pollution all contribute substantially to biodiversity loss in these areas. With a global average of 224,679 pieces of beach litter per km^2 globally, this threat is becoming increasingly worrisome, especially for women, who cannot easily change fishing locations. These concentrations are even higher in Southeastern Asia, Southern Asia, and Latin America and the Caribbean (288, 265 and 245 thousand pieces, respectively). It is also in some of these regions, such as the Pacific Southwest (which covers parts of Southeast Asian waters), that, together with the Mediterranean and Black Seas, the proportion of fish stocks within biologically sustainable limits is lowest (33 per cent, compared to a 65 per cent global average).[26]

Compounding the loss of biodiversity, some coastal communities are also facing the world's fastest rates of mangrove forest loss. In 2020, Western and Eastern Asia lost 14 and 11 per cent of their mangroves in a single year — the world's fastest rates of mangrove loss.[27] Because mangroves are key habitats for the reproduction of marine species, are home to numerous birds, insects, mammals and reptiles, and play a significant role in carbon sequestration, their loss has tremendous environmental consequences. Mangrove forests also represent a significant source of income and food for women who cannot feasibly leave these coastal areas. In Indonesia, for example, the average income of households relying on fisheries in areas with no mangrove loss is 1.3 times higher than the income of households near loss areas.[28]

Figure 13. Global proportion of aquaculture and fishery workers, by sex and type, latest available year (percentage)



Source: ILOSTAT, last accessed on 19 September 2024. Retrieved from: Where women work: female-dominated occupations and sectors - ILOSTAT

Note: Data are weighted averages based on International Standard Classification of Occupations (ISCO-08) unit groups for the latest available data in 57 countries, representing 24 per cent of global employment.

Despite women's substantial reliance on oceans and other blue spaces for their well-being and livelihoods, global decision-making processes overseeing the management of these important ecosystems remain largely in the hands of men.

Currently, several organizations are tasked with governing ocean resources. Under the United Nations Convention on the Law of the Sea (UNCLOS), the International Seabed Authority oversees decisions related to the management of mineral resources, such as exploration for deep-sea mining, among other activities. The International Association of Classification Societies sets requirements for the design and maintenance of ships and promotes their application to improve safety at sea and protect the marine environment. The Commission on the Limits of the Continental Shelf supports coastal countries in establishing the outer limits of their continental shelves where they extend beyond 200 nautical miles, which is critical information for determining fishing rights and other marine activities. When maritime disputes among countries arise, the International Tribunal for the Law of the Sea helps settle these disagreements. The International Maritime Organization acts as the Secretariat of UNCLOS and oversees global shipping, focusing on both security and environmental issues at sea resulting from these economic activities. In addition to these global bodies, regional entities also contribute. For example, the European Maritime Safety Agency helps enforce EU legislation on maritime accidents, marine pollution from ships and the loss of human lives at sea.

All of these organizations play critical roles in managing marine ecosystems, yet women are largely absent from managerial positions in most of them. Currently, the International Association of Classification Societies, the European Maritime Safety Agency and the International Seabed Authority have women serving as heads of the organization. The gaps are even larger at other senior management levels: men hold more than 81 per cent of all managerial positions across these organizations (Table 1).

Table 1. Number of people in top leadership and senior management positions across international organizations managing maritime issues, by sex (total number)

Organization	Head		Senior Management	
	Male	Female	Male	Female
International Maritime Organisation (IMO)	1	0	4	3
International Association of Classification Societies (IACS)	7	3	27	4
European Maritime Safety Agency (EMSA)	0	1	2	2
International Seabed Authority (ISA)	0	1	NA	NA
Commission on the Limits of the Continental Shelf (CLCS)	1	0	19	1
International Tribunal for the Law of the Sea (ITLOS)	1	0	17	6

Note: Job titles are not identical across organizations. At IMO, leadership and senior management positions include members of the Senior Management Committee and division Directors; at IACS, 10 Chairs (Council, General Policy Group, Secretary General and 7 Panel Chairs) are considered part of leadership in ITLOS, judges appointed by Member States hold leadership roles; and at CLCS, all appointments made by Member States fall under this category. At EMSA, the Heads of Departments are classified as leadership, while at ISA, the Secretary General of the Assembly is considered part of leadership. However, for ISA, it was not possible to ascertain the sex and numbers in senior management appointed by the 165 Member States at the time of this research.

GREY SPACES

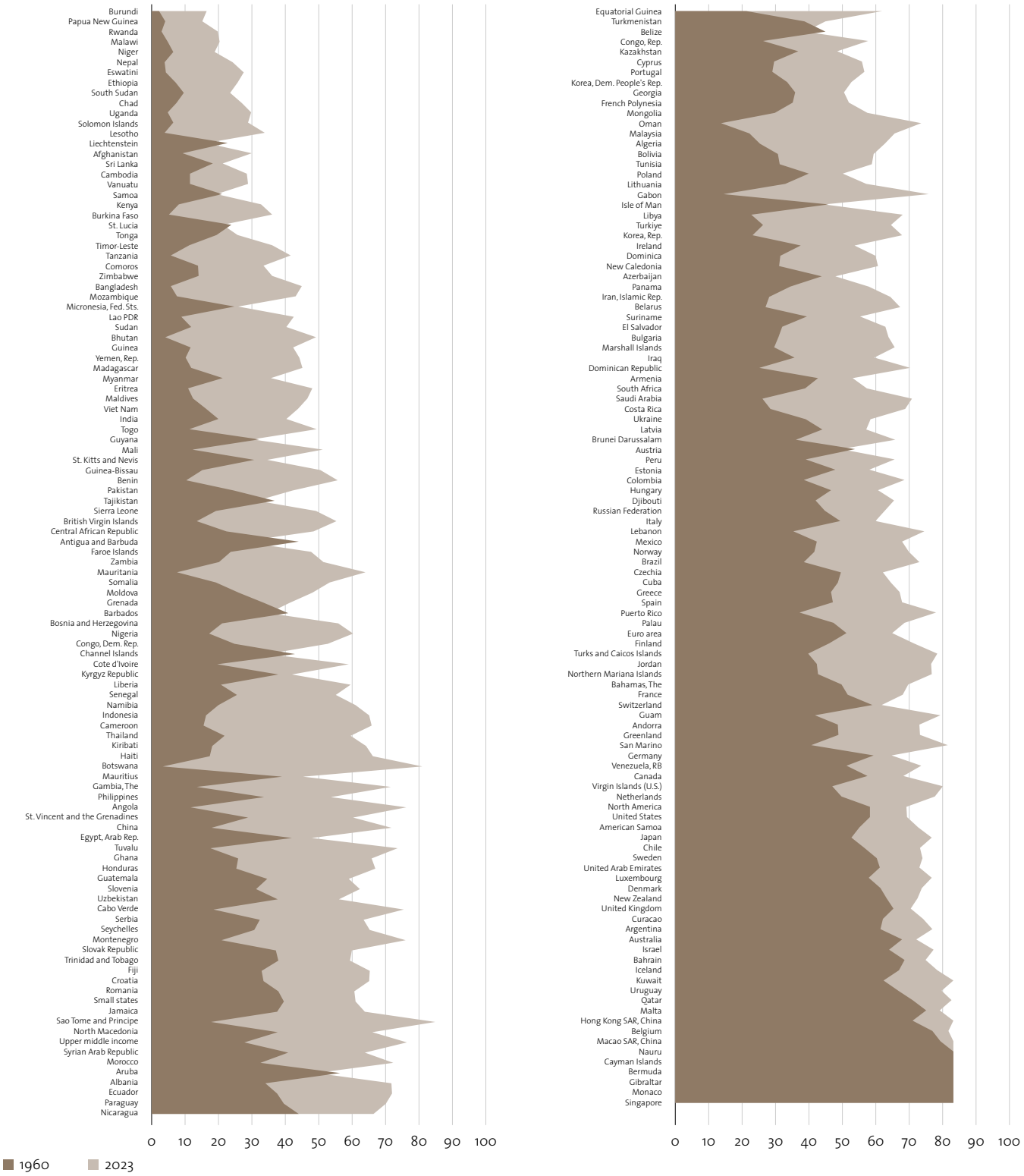
An estimated 57 per cent of people globally lived in urban areas in 2023,[29] up from 34 per cent in 1960 (Figure 14). By 2050, 68 per cent of people are expected to live in cities.[30] Green areas in cities are extremely limited. Where data is available, open public spaces only account for slightly over 3 per cent of urban land.[31] With more than half of the world's population living in predominantly grey spaces, human connections to nature are being lost, which has implications for environmental conservation efforts.

Since 1990, most of the world's cities (65 per cent) have lost green spaces (Figure 15). In Saurimo, Angola, for example, green spaces contracted by 0.96 per cent during this period. Chaozhou, China, and Tétouan, Morocco, have also seen significant losses (0.94 per cent decreases in each). With fewer forests, wetlands, parks and other forms of green space, cities are becoming more prone to flooding and experiencing rising temperatures.

Globally, over the past three decades, the world's biggest capital cities have experienced a 52 per cent increase in the number of days reaching 35°C.[32] For example, Delhi, India, surpassed this threshold 130 days per year over the past five years. In Bangkok, Thailand, this figure stands at 143 days. Besides the obvious consequences of extreme heat on human health[33] and reductions in labour productivity,[34] the disappearance of green spaces in cities contributes to biodiversity loss. For example, seedling dispersal, bird migration and aquatic species reproduction are hampered by the limited availability and fragmentation of urban green spaces. Thus, preserving existing biodiverse urban spaces and implementing nature-based solutions in cities is crucial for global biodiversity conservation.[35,36]

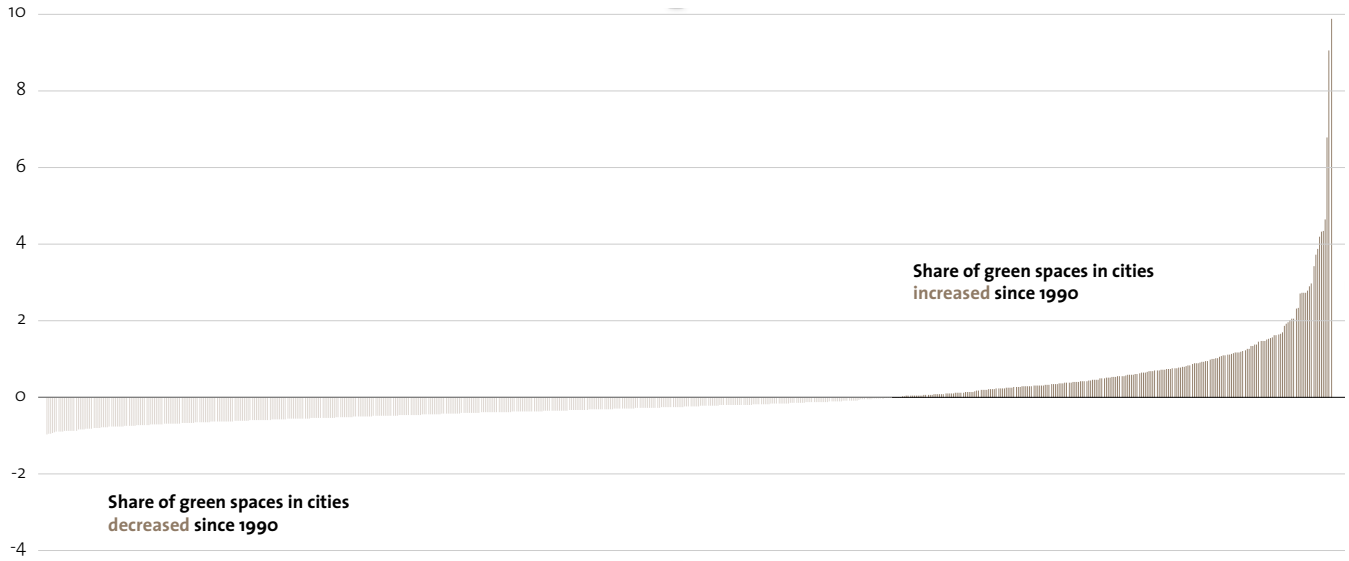
Thirty-six areas largely outside of cities qualify as global biodiversity hotspots. These areas make up roughly 2.5 per cent of the Earth's land surface but support more than half of the world's endemic plant species and 43 per cent of endemic bird, mammal, reptile and amphibian species.[37,38] Protecting these hotspots is critical to the survival of the Earth's ecosystems and to human well-being. Decision-makers, however, often face competing demands for these spaces from economic activities, urbanization pressures and other human activity, which may hinder efforts to preserve these and other biodiverse areas.

FIGURE 14. Proportion of population living in urban areas, 1960 and 2023 (percentage)



Source: United Nations Population Division, 2022. World Urbanization Prospects: 2018 Revision. Last accessed in September 2024

FIGURE 15. Percentage change in share of green spaces in urban areas between 1990 and 2020 (percentage)



Source: UN-Habitat, 2024. Global Urban Indicators Database. Note: Data is based on 667 cities globally. Each bar represents a city. Darker bars refer to cities that have seen an increase in the share of green areas; lighter bars refer to cities that have seen a decrease in the share of green areas since 1990.

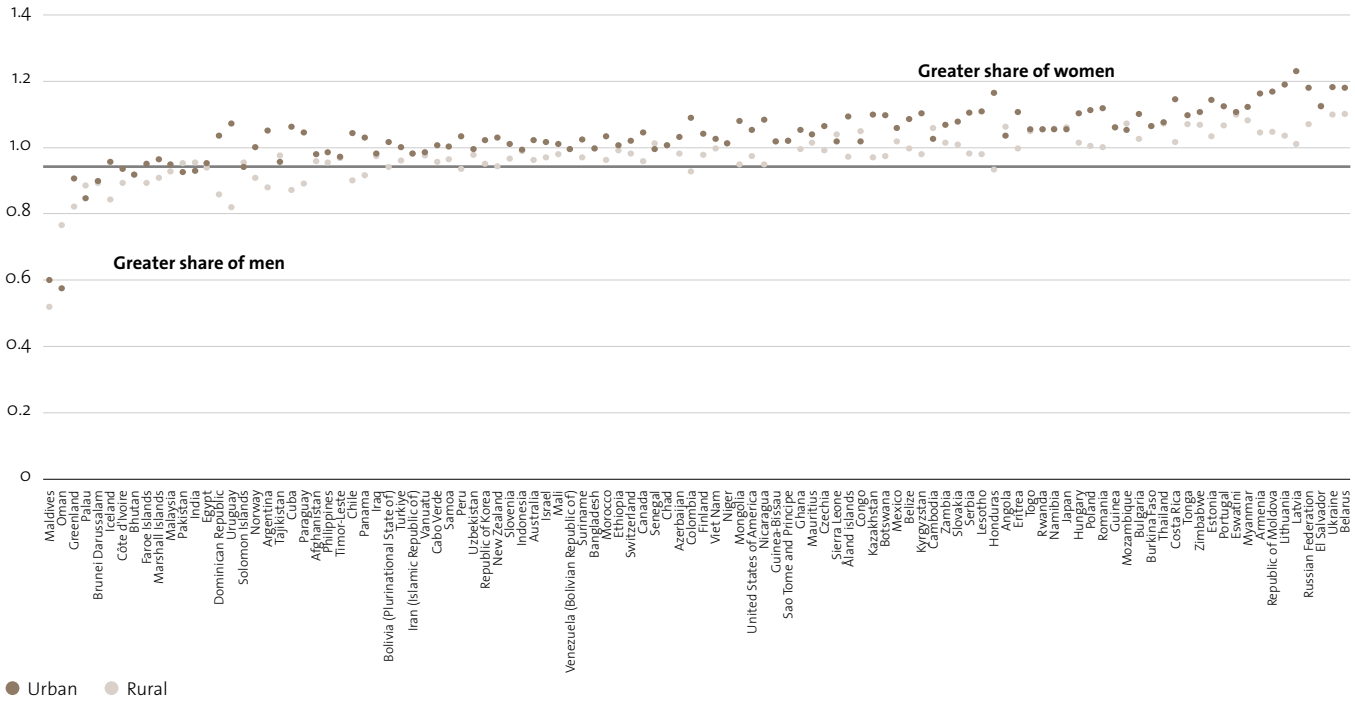
Ensuring that decision-makers implement solutions that promote biodiversity conservation is essential for both people and the planet. Since industry, scientists and government workers contributing to environmental decision-making are largely concentrated in cities, decisions around biodiversity are often made from a distance by those who largely operate in grey spaces.

In most countries and territories, women make up the largest share of the urban population (Figure 16). Living in cities provides opportunities to engage in political decision-making, as well as in scientific development and managerial positions in private-sector entities, all of which can contribute to both biodiversity conservation and degradation. However, despite making up the majority of urban dwellers, women are still largely excluded from decision-making in all three spaces.

At present, only 16 per cent of environmental ministries are headed by women. When in charge, women typically lead ministries related to climate change (25 per cent) or land management (19 per cent). Women are largely absent from leadership roles in ministries related to water management (14 per cent), fisheries (13 per cent), and other ministries that are critically important to environmental conservation and degradation (Figure 17).[39]

Women are also underrepresented in STEM fields. Globally, women comprise only about 30 per cent of researchers.[40] This translates into fewer women being able to make decisions in a field that is critical for environmental sustainability. At the corporate level, women's absence from managerial positions is particularly notable. Women fill the CEO role in none of the world's top 10 fishing firms (by revenue). The same is true for the top 10 forestry firms, agriculture firms, and energy firms.[41] The absence of women in top leadership positions in these firms, many of which are responsible for the largest contributions to biodiversity loss, limits women's potential to influence decision-making processes that have lasting global impacts.

FIGURE 16. Sex ratio of people in urban and rural locations, latest available year, by location (share of women to men)

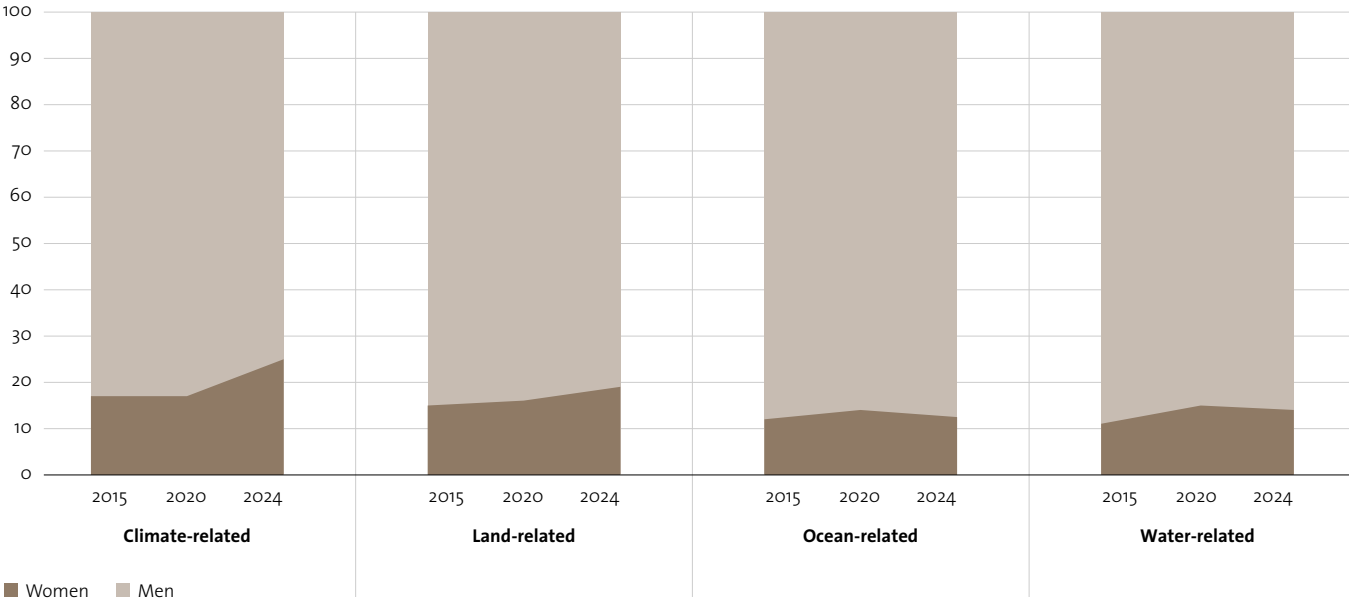


Source: UNSD, 2022. World Urbanization Prospects. Last accessed on 29 September, 2024.

INFOGRAPHIC 1. Number of CEOs (or equivalent) in the top 10 agriculture, fishing, forestry and energy firms, by sex

Note: The figure displays that there are no women CEOs (or equivalent) in the top 10 Agriculture, top 10 Energy, top 10 Forestry and top 10 Energy firms (ranked by revenue). Firm revenue was identified utilizing Bizvibe and each of the firm CEOs' identity was found on the firm's official websites.

FIGURE 17. Proportion of women among heads of national environmental ministries, 2023 (percentage)



Source: IUCN, 2024. Gender equality for greener and bluer futures. Figures have been rounded to the closest decimal point.

To adequately manage Earth's natural resources, it is important to seek contributions from those whose lives are intrinsically connected to them; people in these positions are best placed to advocate for their effective conservation. In many countries, women living in rural areas are disproportionately dependent on these resources. This is particularly true for many Indigenous women, who often hold traditional knowledge of key importance for conservation practices.

Available data on the geographic distribution of Indigenous women is patchy. Surveys do not consistently include questions about ethnicity, and when they do, they do not always list all ethnic minorities among response categories. Furthermore, in countries where Indigenous populations are pastoralists or nomadic, sampling difficulties may result in underrepresentation. Discrimination may also prevent Indigenous populations from disclosing their status when prompted by enumerators.

Cross-country analysis of available data indicates that, in many countries, Indigenous women are more likely than other groups of women to live near terrestrial or aquatic protected areas (Figure 18). Among countries with available data, this is the case in Guatemala, Honduras, Sierra Leone and Uganda. Because these Indigenous communities live closest to these areas and depend on them for their well-being, traditions, and livelihoods, it is critical to ensure their participation in environmental management and related decisions that will both directly and indirectly affect their lives.

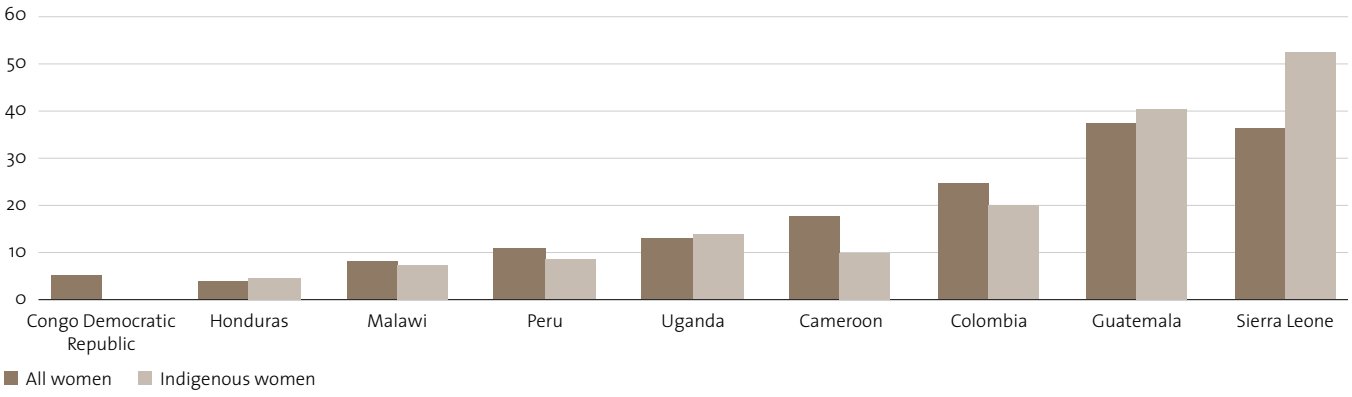
In Cameroon, Colombia, the Democratic Republic of the Congo and Peru, Indigenous populations are not currently more likely to live near protected areas. However, this is partially due to key factors that further highlight the importance of guaranteeing their access to related decision-making. For instance, Cameroon, Colombia and the Democratic Republic of the Congo have some of the world's largest numbers of internally displaced people.[42] In all three countries, due to conflict and instability — sometimes linked to natural resources — many Indigenous groups have been forcibly displaced from areas where the bulk of the protected land is located and, in many cases, from their ancestral lands. In Peru, where many Indigenous groups live near forests and follow a nomadic or semi-nomadic lifestyle, many of these territories are designated as Indigenous Territories rather than protected areas and have different levels of protection.[43]

Protected areas contribute to environmental conservation when managed properly. At present, 43 per cent of terrestrial or freshwater Key Biodiversity Areas (KBAs) and almost 46 per cent of marine KBAs are protected.[44] These shares have almost doubled since 2000, when only 26 per cent of KBAs were protected. This is critically important for halting biodiversity loss, even though there are different levels of protection and enforcement, and not all measures taken are equally effective. To promote the effectiveness of protection systems in ways that are beneficial to both the environment and those whose lives are most directly linked to it, and to ensure protection parameters are adequately enforced among local communities and visitors, Indigenous women should play key leadership roles. At present, however, they are almost always absent from related decision-making processes, which continue to take place in grey spaces, far from the areas where many of them live.

Although women in urban areas are more likely than women in rural areas to prioritize environmental protection over economic growth, more targeted efforts are needed to ensure that these values influence related conservation decisions.

Regional nuances, however, exist regarding these preferences (Figure 19). According to the World Values Survey, in Northern Africa and Western Asia, economic growth generally takes precedence over environmental sustainability, both for women and men, regardless of urban or rural residence. In contrast, Oceania — where the very existence of some countries is at immediate risk due to climate change and environmental degradation — is the region most likely to prioritize environmental conservation (roughly 60 per cent of women and men) and the least likely to prioritize economic growth (approximately 30 per cent). Gender gaps regarding these priorities are generally small, with the exception of urban populations in Oceania and in Latin America and the Caribbean, where women are substantially more likely than men to prioritize the environment. As these two regions are home to most of the world's Small Island Developing States, and as most women in these states disproportionately rely on the environment as their main source of income, it is essential to promote their engagement in environmental decision-making.

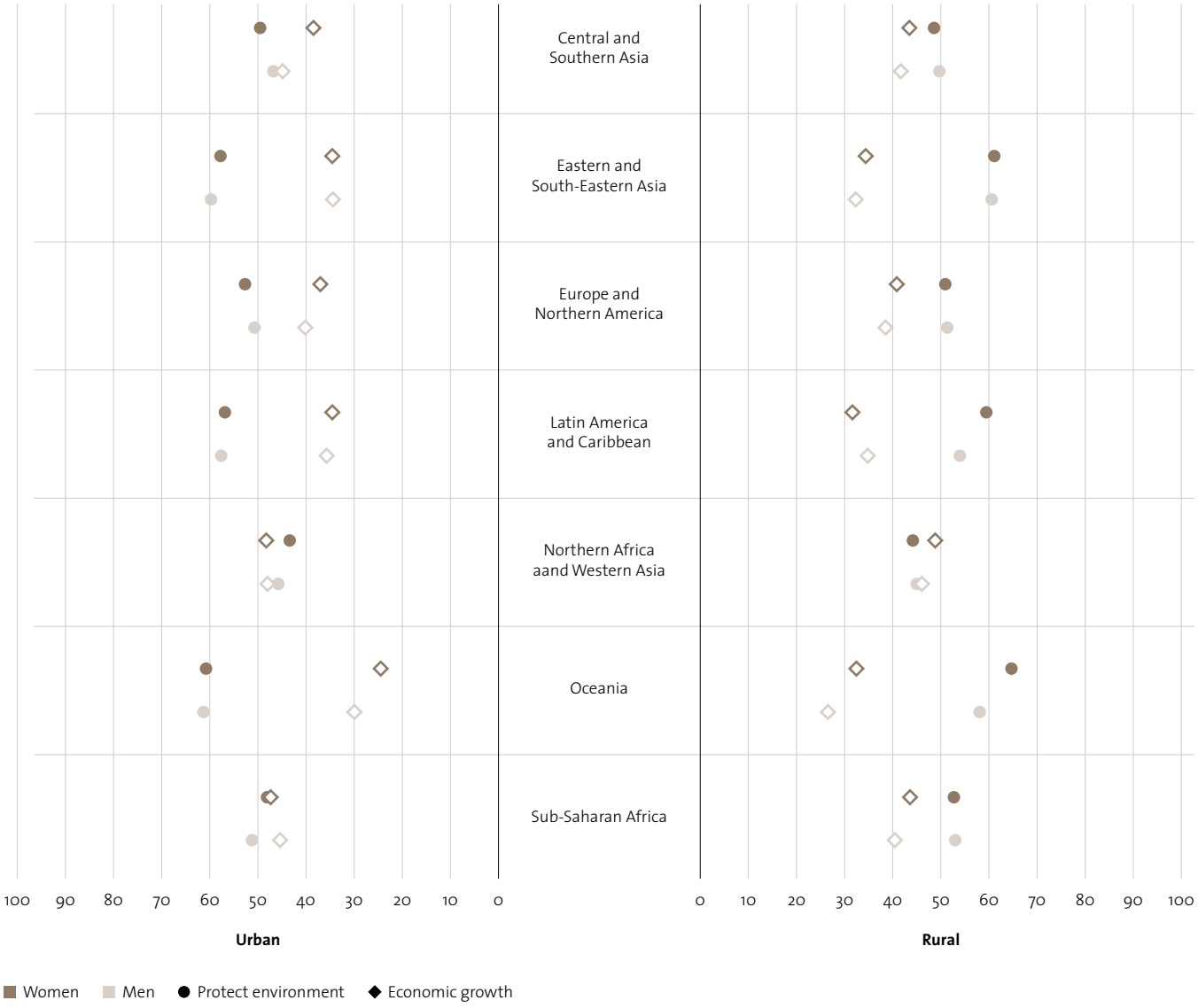
FIGURE 18. Proportion of women who live close to protected areas (within 10 km distance), by Indigenous status, latest available year (percentage)



Source: UN Women calculations based on the latest round of the Demographic and Health Survey (DHS). Proximity to protected areas is defined as a dwelling's location within a 10-kilometre geodesic distance from the centre of the DHS cluster. Examples of protected places include national parks, national forests and national seashores. The dataset includes both aquatic and terrestrial protected areas.

Note: Only countries with available data regarding ethnicity and proximity to protected areas have been included. The classification of Indigenous groups used for this analysis is based on publicly available sources, as DHS collects information on ethnicity, but it does not explicitly classify groups as having Indigenous status. Therefore, the indigenous categories used for this analysis, may not be comprehensive or reflect the full diversity of Indigenous populations. As such, results must be interpreted with caution. Indigenous groups included in this analysis are: Cameroon (Pygmy), Colombia (Native Colombian), Democratic Republic of the Congo (Pygmy), Guatemala (Maya, Xinca), Honduras (Garifuna, Lenca, Maya Chorti, Misquito, Pech, Tawaka), Malawi (Chewa, Lomwe, Ngoni, Tumbuka, Yao), Peru (Aymara, Quechua, Other Indigenous), Sierra Leone (Limba), and Uganda (Basongora, Ik tueso, Karimojong).

FIGURE 19. Proportion of population that values economic growth vs protecting the environment, by sex, location and region, 2017-2022 (percentage)



Source: UN Women calculations based on World Values Survey Association. 2024.

Note: Note: Data is based on 66 countries and territories covered by the World Values Survey Wave 7 (2017-2022). Respondents were asked which of the two statements came closer to their own point of view: "Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs," or "Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent." A third option of "other answer" was noted if respondents chose neither of the two statements. For brevity, only responses to the two statements are presented, so percentages may not add up to 100.

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