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**To cite this article:** RA Ojwala (2023) Status of gender equality in ocean research, conservation and management institutions and organisations in Kenya, African Journal of Marine Science, 45:2, 105-115, DOI: [10.2989/1814232X.2023.2213724](https://doi.org/10.2989/1814232X.2023.2213724)

**To link to this article:** <https://doi.org/10.2989/1814232X.2023.2213724>



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Published online: 06 Jul 2023.



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# Status of gender equality in ocean research, conservation and management institutions and organisations in Kenya

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Gender equality is key to achieving the objectives of the United Nation's Decade of Ocean Science for Sustainable Development. In patriarchal societies, men's dominance has long overshadowed women's participation in science-related fields, including ocean science. The lack of gender-disaggregated data in ocean science has made it difficult to establish the extent of gender bias across institutions and at all levels. Providing baseline data can help to address the difficulty of women accessing employment opportunities in managing coastal and marine resources. This study aims to fill the gap in gender data in ocean science in Kenya by presenting a case study on gender ratios of ocean science professionals in Kenyan research institutions. Data on the gender composition of staff were collected from a range of local to international ocean research, conservation and management organisations situated in Kenya. The results show fewer women were represented in government agencies than in nongovernmental organisations (NGOs) and intergovernmental organisations (IGOs). There was also an underrepresentation of women in senior positions, with only two out of nine directors in government agencies being women. The majority of women occupied junior positions. Further research through in-depth interviews will be needed to establish the reasons for the disparities in representation and career advancement.

**Keywords:** baseline study, East Africa, gender-disaggregated data, gender inequality, hierarchies, ocean science institutions, senior positions, sustainable development

## Introduction

The oceans provide essential ecosystem goods and services to human beings and societies, and their use needs to be sustainably managed if they are to provide for future generations (Francis and Bryceson 2001; Barbier 2017; Kaluza et al. 2018; Virto 2018; Brodie Rudolph et al. 2020). To a large extent, the responsibility for ocean governance and management lies with governmental and intergovernmental organisations and, to a lesser extent, nongovernmental organisations and coastal communities (Boesch 1999; Hoel et al. 2005; Cho 2006; Kibiwot 2008; Haas et al. 2022). Gender equality needs to be a policy priority for such organisations and is considered essential for the sustainable use of marine resources and effective ocean governance (Gissi et al. 2018; Michalena et al. 2020; Sun et al. 2021).

Coastal management often fails if there is inadequate engagement with the stakeholders, especially if those excluded are predominantly women (Diamond et al. 2003; Kibiwot 2008; Brugere 2014; Gissi et al. 2018). While women and men may play differentiated roles in different workspaces, the contributions of women to research, policy and governance regarding marine resources are often unnoticed even though they are the primary users and influencers of marine ecosystems through pursuit of their livelihoods across countries in the Global South, especially in the African context (Fröcklin 2014; Michalena et al. 2020; Giakoumi et al. 2021). For example, women play an essential role in mangrove regeneration and fisheries management in many developing countries,

including Kenya<sup>1</sup> and Cambodia<sup>2</sup> (FAO 2015; King and Cordero 2015; Harper et al. 2017; IUCN 2017; UN Women 2018a; OECD 2022).

In fisheries, as fish traders and processors, women comprise over 90% of those involved in post-harvesting activities (Harper et al. 2013; Matsue et al. 2014; Shah and Bukhari 2019; Siles et al. 2019), and there may be more subtle influences both at the community and household levels (Gissi et al. 2018). However, women are underrepresented in fish harvesting and seagoing research activities (Johannesen et al. 2022), and their contribution to fisheries and marine management is often overlooked in statistical summaries and reports (Allison and Mvula 2002; Kleiber et al. 2015; Biswas 2017). Indeed, women tend to be restricted from engaging actively in science-related academic programmes, seagoing research undertakings and decision-making processes, and are more likely to occupy junior positions in ocean management (Kitada and Langåker 2016; Zhao et al. 2017; Gissi et al. 2018; Arulnayagam 2020; Johannesen et al. 2022; Ojwala et al. 2022). Other studies have also highlighted the persistent gender bias in marine science and the challenges inhibiting women's participation in ocean management and

<sup>1</sup>See <https://www.nature.org/en-us/about-us/where-we-work/africa/stories-in-africa/women-kenya-mangrove-forest>

<sup>2</sup>See <https://www.oneearth.org/women-are-leading-the-charge-rewilding-mangroves-in-cambodia>

career progress both in developed and developing countries (Fröcklin 2014; De la Torre-Castro et al. 2017; Giakoumi et al. 2021; Shellock et al. 2022a, 2022b).

Oceans are increasingly threatened by human activities, with marine pollution, global warming and overfishing negatively affecting ocean health around the world. The United Nations adopted the Sustainable Development Goals (SDGs) in 2015 as the 2030 Agenda for Sustainable Development to provide a universal call to action to protect the planet and improve livelihoods (United Nations 2015, 2022). One of these goals is SDG 14: 'Life below water', which aims to "conserve and sustainably use the oceans, sea and marine resources" and is concerned about the health of the ocean. Even though the SDGs advocate for inclusive involvement of all stakeholders in environmental action as defined by the slogan 'Leaving no one behind', SDG 14 remains gender blind without any gender-specific indicators in its targets. Addressing the nexus between gender and ocean health is therefore key in advancing towards equitable, fairer and more-sustainable use of the ocean. To enhance the implementation of SDG 14, a 10-year plan (2021–2030), called the UN Decade of Ocean Science (hereinafter the Ocean Decade), was adopted by the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) to generate knowledge and innovative solutions to reverse the decline in ocean health. Although SDG 14 does not reference gender, the Ocean Decade is committed to achieving gender equality in ocean science and provides the opportunity to accelerate efforts towards ocean sustainability.

SDG 5: 'Gender equality' aims to provide equal opportunities for both women and men to, *inter alia*, participate in ocean research and management, and accelerate progress towards a more equitable and sustainable ocean for all (Ojwala et al. 2022). Gender equality, therefore, should be mainstreamed into all international development programmes. However, a lack of gender-disaggregated data masks the true extent of gender inequality in many programmes and institutions. Gender-disaggregated baseline data are crucial for understanding the gaps and help to keep track of and enhance progress in promoting gender equality. Additionally, they can provide a way forward to acknowledge and recognise the substantial roles and contributions of women in ocean science and the benefits that gender equality brings to organisations. Without the systematic collection of gender-disaggregated data, there will be no way to assess whether programmes like the UN Decade of Ocean Science have succeeded in delivering their promise of gender equality.

Historically, women have been underrepresented in science-related jobs, including marine management and fisheries in developing countries, such as Kenya (Agarwal 2001, 2010; Todes et al. 2010; Hicks 2011; Gillanders and Heupel 2019). In fisheries, for example, women are typically limited to nearshore activities using small handnets, which have lower income returns than the activities usually undertaken by men (WorldFish 2010, 2016; FAO 2015). This gender bias against women stems from cultural and superstitious beliefs that women on board research and fishing vessels represent a bad omen or taboo, which hinders their participation in offshore activities (Aloo

et al. 2000; Medard et al. 2002; Lwenya et al. 2006; Geheb et al. 2008; CISP 2018; Nunan and Cepić 2020). There are also deeply rooted cultural norms and distinct gender roles across many cultures, including in Kenya, that recognise women as caregivers rather than as ocean professionals or managers of natural resources (Matsue et al. 2014; CISP 2018; Muigua 2018a; Owuor et al. 2019; Murunga 2021). Such cultures and norms are not only unfair but also stand in the way of innovative and creative ideas, diverse perspectives and novel solutions that are needed for successful ocean management (Kleiber et al. 2015; DFO 2020; Sun et al. 2021).

Promoting gender equality by eliminating gender biases in ocean science institutions is a crucial contribution to efforts in ocean conservation, protection and governance systems (Ojwala et al. 2022). Consistent efforts are needed to address the various challenges that prevent women from accessing ocean science-related jobs, including gender bias, stereotypes, harmful gender norms, lack of role models, lower wages, sexual harassment, and discrimination in workplaces (Orcutt and Cetinić 2014; Arulnayagam 2020; O'Connell and McKinnon 2021). If we are to be in a position to evaluate the impact of such initiatives, it is vital to assess the extent to which women actively participate in ocean research, management and governance. For this, there is a need to collect gender-disaggregated data so that an accurate scale of underrepresentation and the actual contribution of women to ocean sustainability can be presented.

In Kenya, resource governance, including that pertaining to ocean resources, has been devolved to county levels as enshrined in the 2010 Constitution: "The Constitution establishes national values, rules and principles that facilitate the realisation of equality and inclusiveness in governance which include establishing mechanisms that ensure fairness in sharing of national resources and devolution of governance to county levels" (Ruwa 2011, p 11). National and county governments are distinct but interdependent and conduct their mutual relations on the basis of consultation and cooperation (Government of Kenya 2010). Thus, the purpose of devolution is to ensure inclusive citizenship in the formulation and implementation of public policy and to enhance grassroots participation in decision-making to avoid marginalisation. This should include promoting the democratic and accountable exercise of power and fostering national unity by recognising diversity and protecting and promoting the interests and rights of minorities and marginalised communities (Ruwa 2011; Muigua 2018b). The county government is, therefore, responsible for implementing policies under its jurisdiction.

According to Odido (1998), there is no single institution responsible for all aspects of marine affairs or resources in Kenya. Many institutions have been created to oversee and deal with specific aspects of ocean-related projects and programmes to facilitate adaptive management and achieve sustainable oceans (Odido 1998; Kibiwot 2008). These institutions operate at county (local), national, regional and even international levels, and they include government institutions and other relevant organisations that address legal, policy and institutional arrangements,

such as nongovernmental organisations (NGOs) and intergovernmental organisations (IGOs) (Ruwa 2011). The governance systems are mandated to carry out activities such as education, research, conservation, restoration and management. The government institutions with a mandate for ocean resources management include the Fisheries Department, Coast Development Authority and Kenya Wildlife Service, whereas research institutions and universities together with NGOs and IGOs provide synergy or collaborate in ocean management in Kenya.

As the ocean plays a critical role in the Kenyan economy and climate, ocean governance has always received much attention. Collaborative efforts to achieve sustainable oceans led to the development of UNEP's Regional Seas Programme, known as the Nairobi Convention,<sup>3</sup> which implements regional action plans at national levels based on global strategy (Kibiwot 2008). However, the concerted efforts and strategies to address the growing problems of overfishing, acidification, marine litter and plastic pollution, among others, in the oceans have shown minimal progress. Some of the reasons for this include the lack of an integrated approach in mapping ocean resources, ineffective implementation of policies and a lack of diversity and equality in management. To address these issues the governance mechanism must be inclusive and integrated horizontally (across departments, disciplines and specialised agencies both in public and private sectors) and vertically (across local, national, regional and international levels). Therefore, there is an urgent need to address inequalities in ocean governance, to address exclusion of women in ocean spaces at both local and national levels, and to reverse declining ocean health that is causing a massive loss of marine biodiversity.

To address issues of gender inequality, Kenya has ratified international legal frameworks on gender equality including the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and the Beijing Declaration and the Platform for Action, which guided the formulation of national gender policy of the Ministry of Gender and partly the Kenyan Constitution. The Constitution and national gender policies have been adopted by a number of institutions to inform their gender equality and sexual-harassment policies. The establishment and implementation of gender-related policies at institutional levels, however, have faced several changes, including a lack of human and financial resources (Onsongo 2009; Ojwala et al. 2022).

This study focused on the non-academic ocean research and management community in Kenya, which comprises governmental, nongovernmental and intergovernmental organisations. Kenya has developed national and institutional gender policies, including the Kenya National Policy on Gender and Development (NPGD) 2000, revised in 2019 to incorporate the recommendations outlined by the 2010 Constitution of Kenya, which introduced the 'Two-thirds gender principle' to help accelerate the achievement of equality in all institutions. This principle is one of the affirmative actions enshrined in the Constitution in Article

27 (8) and it states that "not more than two-thirds (66.67%) of any elective or appointive position in the government of Kenya shall be of the same gender". However, no study has yet been conducted to investigate the gender representation of women and men staff as well as their distribution at different hierarchies (ranks) in ocean science institutions in Kenya. Thus, the present study investigated the gender ratios of staff in government agencies, NGOs and IGOs. The objectives were to determine the ratios of women and men among staff in ocean science professions in Kenya and to investigate how gender ratios vary across the different ocean science institutions and at different career levels. The overall goal was to create baseline data from which progress can be measured and to facilitate openness and transparency in ocean science staffing.

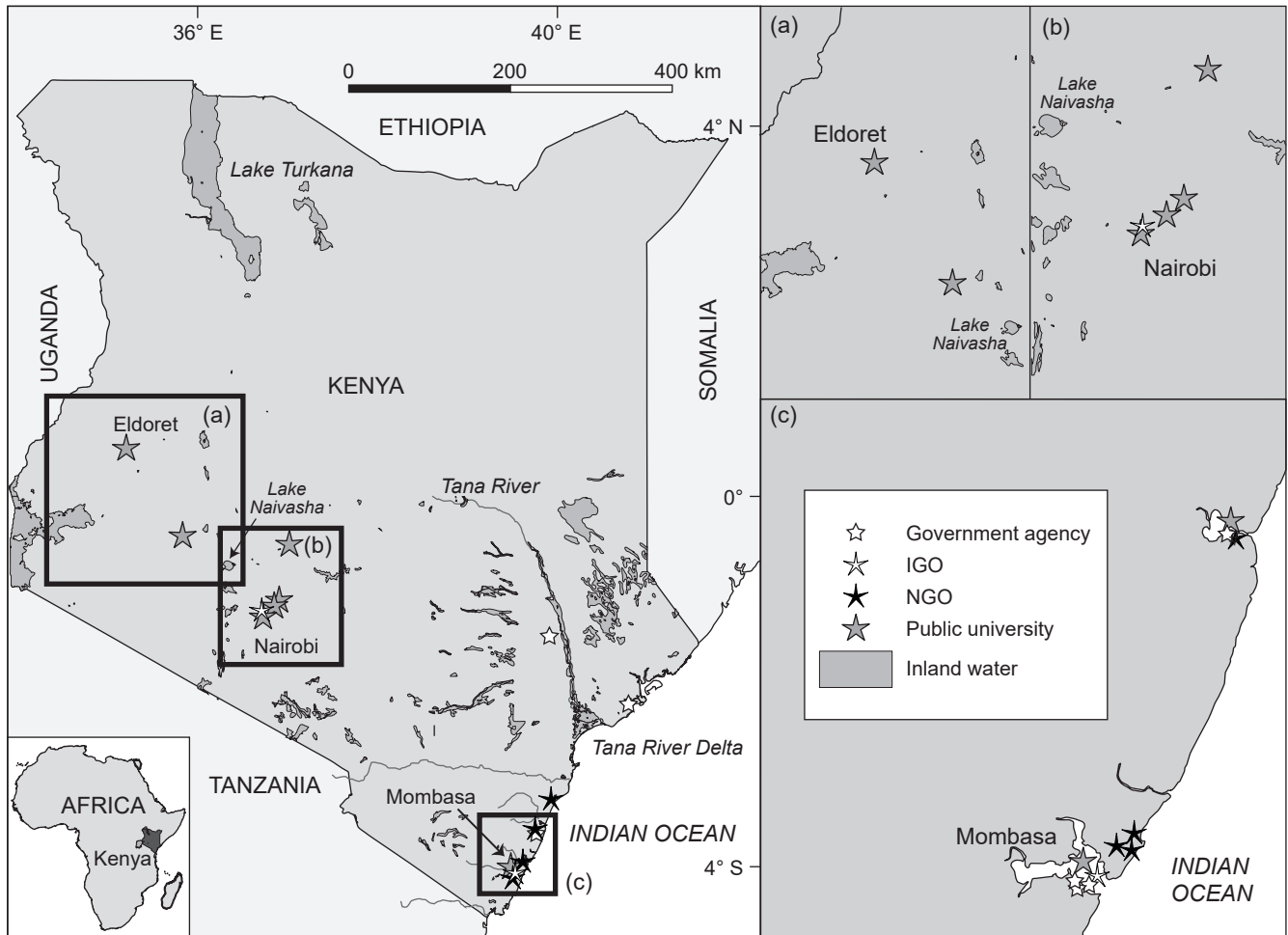
## Materials and methods

### Case study

The study was conducted in Kenya from June to October 2021. Kenya was selected because of its active participation in ocean-related initiatives (Obura 2020) such as the Ocean Decade, under which it co-hosted the UN Ocean Conference with the Government of Portugal in Lisbon in 2022. Kenya's commitment to sustainable use and management of the ocean can also be traced back to 2018 when it hosted the inaugural Sustainable Blue Economy Conference, considered the African historical event to fast-track marine environmental protection (KMFRI 2018; Muigua 2018a; Bennett et al. 2019). This initiative reflected the importance of the ocean to the Kenyan economy, particularly in the fisheries and tourism sectors (CISP 2018). Several institutions in Kenya work together to ensure that the ocean's health is restored and maintained through collaborations and partnerships. According to Odido (1998), no specialised agency is mandated to conserve and manage the ocean in the country, which partly explains why there are many institutions in the Western Indian Ocean region. Kenya needs equitable and integrated ocean management to successfully implement the Ocean Decade, involving all the institutions and stakeholders, and women and men alike. Having a successful management regime in the marine environment depends on identifying and understanding different stakeholders, expectations and interests (Pomeroy and Douvère 2008). The ocean science institutions have demonstrated attempts to reverse degraded ocean ecosystems because their mandates align with the seven overarching societal goals of the Ocean Decade (Ryabinin et al. 2019).

This study was carried out in 19 ocean science institutions in Kenya, which were identified through criteria based on each institution's work to conserve, protect, study and manage coastal and ocean resources in Kenya (Figure 1). These institutions included: five county government agencies, four national government agencies, seven NGOs and three IGOs. They were selected using purposive sampling methods based on their mandates and contributions towards the Ocean Decade goals and their roles in ocean management and governance (Barahona-Fuentes et al. 2020).

<sup>3</sup>See <https://www.nairobiconvention.org/kenya-country-profile/marine-and-coastal-resources-governance-kenya-country-profile>



**Figure 1:** Locations of the selected ocean science institutions in Kenya included in this study

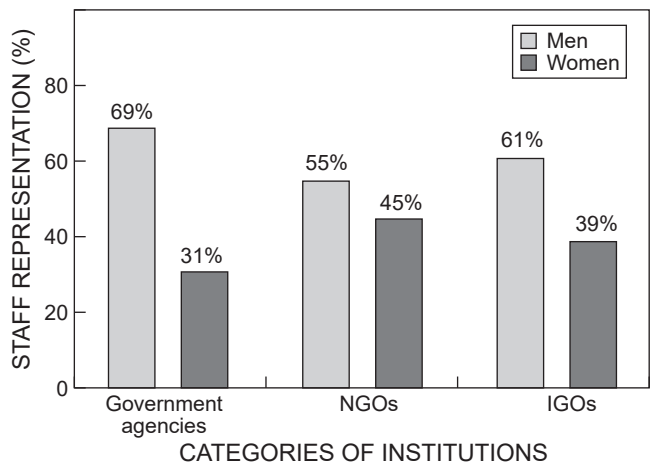
**Data collection and analysis**

The fieldwork gathered numerical data on staff composition by gender, with the help of the human resource personnel in the IGOs, NGOs and government agencies. The names of the institutions were anonymised using codes to ensure confidentiality. The World Maritime University’s Research Ethics Committee (Sweden) and the National Commission for Science, Technology and Innovation (NACOSTI) (Kenya) approved the study procedures before data collection. Primary data on staff representation were analysed quantitatively through descriptive statistics, such as the frequency distribution of ocean staff, means and percentages, using SPSS 22.0. Percentages were used to compare staff distribution by gender and position across the institutions.

**Results**

**Status of gender equality in the selected ocean science institutions**

Overall, data obtained from ocean science institutions in Kenya regarding staff representation by gender and position (rank) demonstrated a clear pattern and persistent bias in all institutions. In Figure 2, the percentages clearly



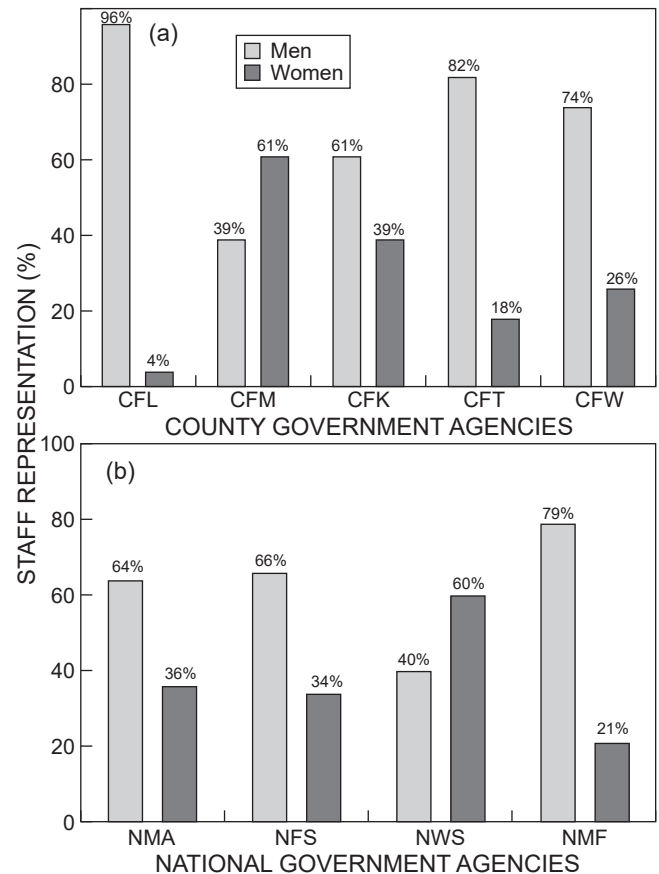
**Figure 2:** Representation of women and men staff in ocean science institutions in Kenya, June–October 2021. Numbers of participating institutions (staff included): government agencies = 9 (904); NGOs = 7 (69); IGOs = 3 (180)

indicate that women's representation was lower in all three categories of organisation studied as compared with their male counterparts. However, the proportions were inconsistent across the institutions. The government agencies (31% women) were slightly below the minimum threshold of 33.33% set by the Kenyan Constitution, whereas the other two groups exceeded this threshold: NGOs had 45% women and IGOs 39%.

### Representation of women in government agencies

The percentages of women in government agencies provided the most marked example of the gender gap, with the lowest or barely compliant representation of women in most institutions in this category. The institutions surveyed were anonymised using codes that distinguished county from national institutions: those from counties start with 'C' and national institutions start with 'N'. There was no apparent difference in women's representation between county and national agencies. The findings showed that the average representation of women in county institutions was lower (32%) than that of men (68%). Similar findings were recorded in national institutions with an average representation of 30% women and 70% men. Figure 3 illustrates the variation in representation of women between individual county and national institutions.

Another measure of gender equality is the representation of women in the hierarchy of an organisation. In this study, this was quantified across individual organisations in county and national government institutions (Figure 4). The figures indicate that women were more likely than men to be underrepresented at all the levels of the hierarchy, with less than 33% in each position in national government institutions (Figure 4b) compared with the county government institutions which exhibited better representation of women above the threshold in two positions (director and technical staff). Fewer women were observed in the more senior positions, such as director and assistant director, which is similar to findings in ocean science in other countries (Thompson et al. 2011; Huyer 2015) that showed the higher the rank, the lower the proportion of women, especially in decision-making and leadership positions. Women are more likely to occupy junior positions, such as support staff and technical staff positions. The individual government institutions were analysed to investigate how well the women staff were represented. Among the five county government institutions, women were more concentrated in junior or technical positions, with two women filling five of the director positions (Figure 4a). In addition, there was no government agency that had an institutional gender policy. Some of the institutions' gender focal points—the head or director of gender centres that are mandated to monitor and report on gender equality aspects in the institutions<sup>4,5</sup>—mentioned that their gender policies were still in draft format



**Figure 3:** Gender representation among ocean science professionals in (a) county and (b) national government institutions in Kenya (county agencies:  $n = 151$ ; national agencies:  $n = 753$ ). Institution names are encoded for anonymity

and awaiting senate approval. This finding shows that to date the adoption and implementation of the national gender policy has not been widely disseminated, even 10 years after its formulation.

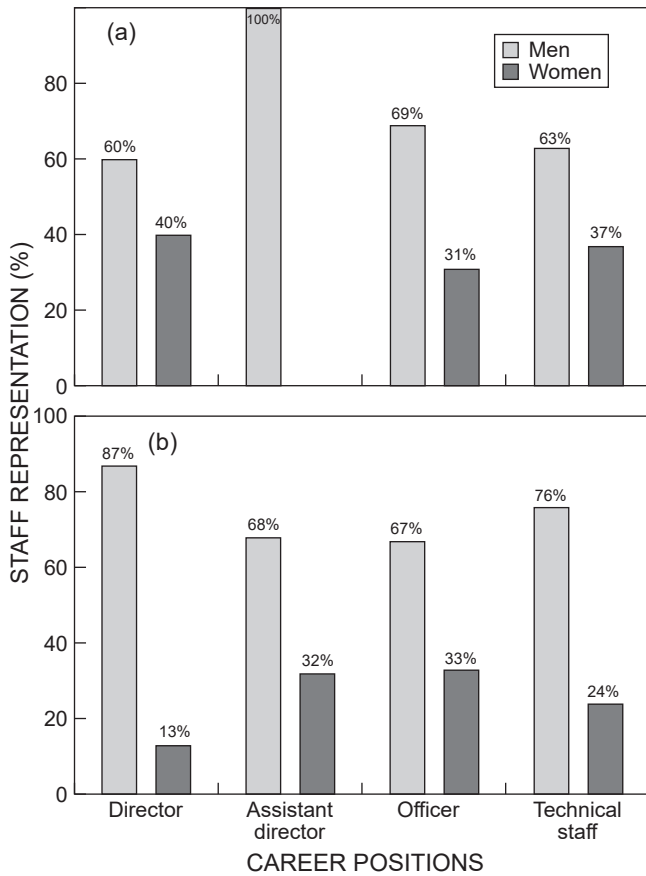
### Representation of women in NGOs

NGOs appear to have performed better in staff gender balance than government agencies and IGOs. Like government agencies, the NGOs surveyed were also anonymised with codes derived from their names. The findings showed that three out of the seven NGOs studied had better representation of women staff than governmental and intergovernmental organisations. These organisations were COD, OCS and COM, with the highest percentage of women recorded in COD and the other two having representation of 50% each. Despite lower numbers than COD, OCS and COM, all but one (COB) of the remaining four NGOs had 30% or more women constituting their workforce. These percentages were above the averages for most government agencies (Figure 5).

A further assessment of the overall representation of women staff in NGOs was also done for the hierarchical rankings. The results showed that the gender gap is smaller at the junior positions such as technical staff than at the

<sup>4</sup>See <https://www.unwomen.org/en/how-we-work/gender-parity-in-the-united-nations/focal-points-for-women>

<sup>5</sup>See <http://gender-chemicals.org/what-is-a-gender-focal-point>: "The Gender Focal Points role is advocating for increased attention to and integration of gender equality and women's empowerment in the agency's policy and programming."

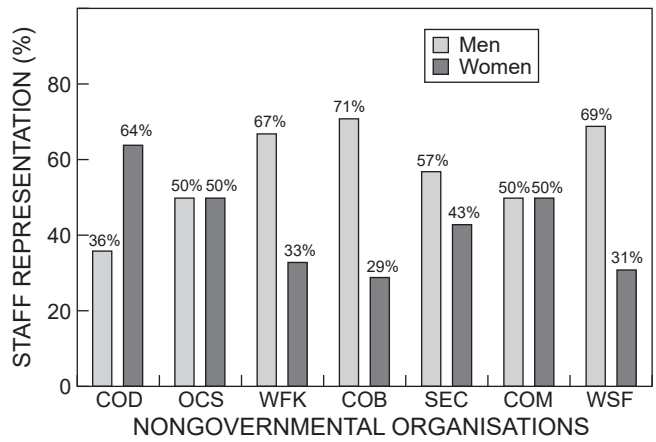


**Figure 4:** Staff composition by gender and position in (a) county and (b) national government agencies dealing with ocean science in Kenya ( $n = 904$ : 627 men, 277 women)

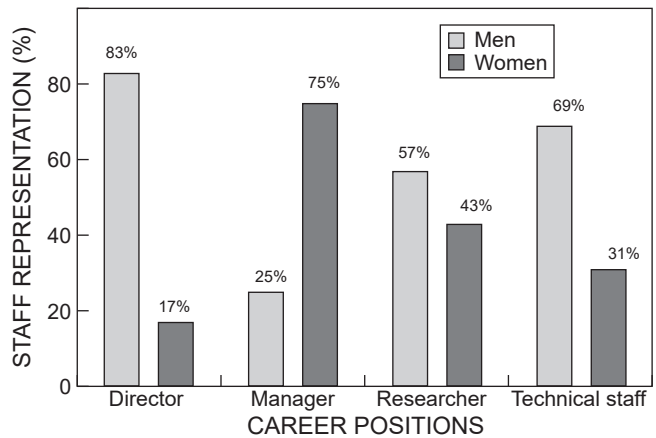
senior ones, like director or manager. While women were well represented in the category of manager as compared with men, this was an anomaly, as their numbers were less in all other positions. The widest gap was at the director level—the most-senior leadership position in all the NGOs investigated, where the survey results found almost five-times fewer female directors than male directors (Figure 6).

Further analysis of each NGO by gender and position suggested that more than half of the institutions were missing women in one or more positions, such as manager and researcher. For example, one of the conservation NGOs (anonymised as WFK) had a woman director yet no women in other positions in the organisation. Notably, only COD had women distributed in all five professions/career positions reviewed in this study, and atypically these women were in greater numbers than men.

Of the seven NGOs assessed, only one NGO (WFK) had an institutional gender-equality policy. However, this policy document had largely gender-neutral strategies that did not address specific barriers that hinder women’s access to employment opportunities as well as fair recruitment processes. Studies have revealed that funding mandates have helped to shape the increase in women’s representation in NGOs based on the donors’ requirements.



**Figure 5:** Gender representation among ocean science professionals in nongovernmental organisations in Kenya ( $n = 69$ : 38 men, 31 women)



**Figure 6:** Representation of staff by gender and position in nongovernmental organisations dealing with ocean science in Kenya ( $n = 69$ : 38 men, 31 women)

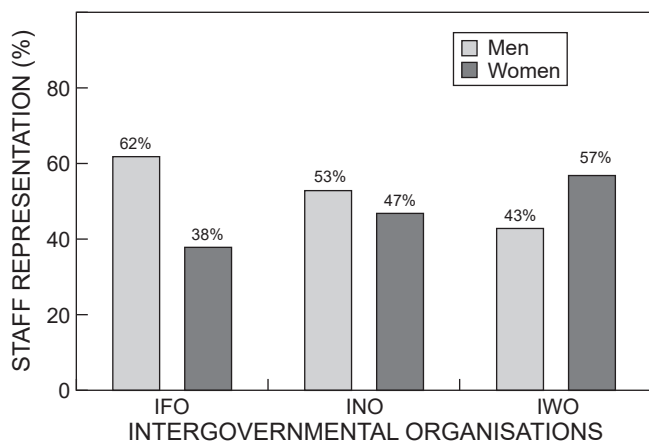
Most donors, such as the World Bank,<sup>6</sup> Government of Canada<sup>7</sup> and Global Environment Facility (GEF) in Kenya, allow strategic opportunities to be leveraged to address gender gaps critical to the achievement of global environmental (ocean) benefits (GEF 2017).

**Representation of women in IGOs**

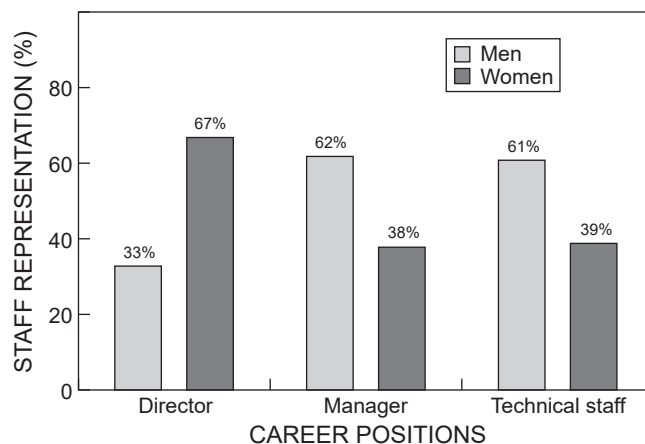
An assessment of the representation of women in IGOs in Kenya yielded mixed results. One of the three IGOs (IWO) had representation of women of greater than parity, followed by another (INO) close to parity, and one that recorded the lowest percentage (IFO), but that was also above the threshold deemed acceptable by the Kenyan Constitution (Figure 7). Based on the staff distribution by gender in each of the three

<sup>6</sup>See <https://www.worldbank.org/en/topic/gender/overview>

<sup>7</sup>See [https://www.international.gc.ca/gac-amc/campaign-campagne/gender\\_equality\\_egalite\\_des\\_genres/what\\_we\\_heard-que\\_nous\\_entendu.aspx?lang=eng](https://www.international.gc.ca/gac-amc/campaign-campagne/gender_equality_egalite_des_genres/what_we_heard-que_nous_entendu.aspx?lang=eng)



**Figure 7:** Gender representation among ocean science professionals at three intergovernmental organisations in Kenya (*n* = 180: 109 men, 71 women)



**Figure 8:** Staff representation by gender and position in intergovernmental organisations dealing with ocean science in Kenya (*n* = 180: 109 men, 71 women)

IGOs, there was a better ratio of women to men as compared with either the government institutions or the NGOs.

Unlike other organisations, the IGOs had women represented in all the positions; however, the majority were recorded in junior positions (Figure 8). Remarkably, two of the three directors of IGOs in Kenya were women, although men were in the majority across all the managerial positions in all three IGOs.

A deeper analysis on positions by gender in each of the three IGOs showed that women were represented in almost all positions in the organisations studied. Women were more likely to be employed in technical staff positions than in management positions. Notably, two of the three organisations (IWO and IFO) had institutional gender policies, although the existence of these policies did not always translate to gender equality, and INO, with no such policy, had a better gender balance than IFO.

**Discussion**

The underrepresentation of women in ocean science indicates the need to continue to raise awareness and build capacity to understand and address the problem. However, this is only possible if gender gaps are identified and quantified. This study addresses the context of ocean governance in non-academic institutions and provides baseline gender-disaggregated data, which were previously unavailable. These data can be used to evaluate gender inequalities in ocean science disciplines, institutions and hierarchies in Kenya. Such data are essential when evaluating or considering whether gender policies and gender-sensitive approaches in ocean science and governance are achieving success. The data reveal gender gaps in ocean science across institutions, ranging from local to international organisations, despite the existence of a national gender policy, and in some instances the existence of institutional policies and other initiatives to promote gender equality, such as gender centres or gender focal points within the institutions.

The results reveal consistent patterns, where women in

the three categories of institution in ocean governance in Kenya were fewer than men. The average employment ratio of women to men was 38% to 62%. This is similar to the global average of women in ocean science reported by the IOC-UNESCO in the 2020 global gender gap report (IOC-UNESCO 2020), as well as the findings of previous studies that highlighted the low representation of women in science-related fields (e.g. Huyer 2015; Mackenzie 2015; Wallet 2015; UNESCO 2021). The findings conform with those of Huyer (2015) who pointed out that women were underrepresented in natural science professions in South Africa in 2006, accounting for only 16% of the employees. Huyer (2015) highlighted that women’s participation is likely to decrease at every step of the career ladder in scientific research and decisionmaking positions at the highest echelons. Ojwala et al. (2022) also found that women academic staff in ocean science-related programmes were more likely to occupy non-tenured positions in public universities in Kenya, at 60%. Shaw and Stanton (2012) also noted an ongoing gender imbalance in academia through career transitions from junior to senior positions.

This study indicates varied performance in terms of staff representation by gender in the three categories of institution, but women were nevertheless underrepresented in all of them. NGOs and IGOs performed better—with close to 50% representation of both genders—than government institutions, which was well above the threshold of 33.33% enshrined in the Kenyan Constitution. These findings may be attributed to the fact that both NGOs and IGOs are viewed as being more flexible, participatory and open to change and innovation (Srivastava and Austin 2012). NGOs participate in advocacy programmes, such as influencing policies and conducting issue-based campaigns; in developmental programmes, such as increasing the capacity of the community to address its own basic needs; and in promoting economic empowerment of women through providing access to microfinance and improving the health and education of women in developing countries. Also, NGOs have been at the forefront of documenting discrimination against women from the viewpoint of



women's rights as human rights, and promoting the need for a gender-sensitive approach in all sectors (Streeten 1997), especially in science education, as well as exposing violence against women (Handy et al. 2007). Moreover, government and donor agencies have increasingly relied on local NGOs in developing countries owing to their proximity to grassroots communities and profound insight into women's concerns (Mehra 1997). Since most of these NGOs have been funded by international development organisations, such as the GEF and World Bank, with stricter gender equality requirements than stipulated by nationally funded ones, the NGOs surveyed were more likely to adhere to their requirements to qualify for a research grant or for funds, and this has shaped the representation of women among the staff in NGOs (GEF 2017). Even though NGOs tend to have some advantages that attract women, they have been identified as insecure workplaces because they often depend on short-term projects and are prone to end because of the lack of fund availability (ILO 2012, 2016). Hence, jobs are usually contractual, with some having non-renewable contracts. As a result, staff lack social protection in the workplace. These factors can be disadvantageous to all employees and the majority in this case are women.

Women's representation (31%) in government agencies did not meet the threshold of 33.33%, unlike in NGOs and IGOs. However, conformity with the threshold set in the constitution does not necessarily mean adequate representation of women. The reason for this is that the majority of women were found to occupy junior positions or entry-level positions that do not allow them to participate and engage fully in research and management of the ocean. The general conclusion from the data is that, across the board, institutions need to improve the gender balance both in senior and junior positions, as men overwhelmingly occupy these positions currently. This type of bias appears to be part of the tradition in most government agencies in Kenya and corresponds with similar findings of a study of ocean science programmes in public universities in Kenya (Ojwala et al. 2022). Kenya's public universities recorded a percentage of 32% women to 68% men as academic staff in the departments offering ocean science courses. In combination, these findings provide clear evidence of the difference in performance of the government-affiliated organisations compared with the private ones. Moreover, previous studies have noted that institutions associated with government tend to have many challenges that exclude women from the ocean science fields, including lack of institutional gender policies, inadequate support and training opportunities, and gender stereotypes. These result in fewer women leaders, as well as a lack of mentorship programmes (Onsongo 2006).

Another key finding of the present study was that, in addition to inequality in staff composition by gender in various institutions, gender biases were also found in the hierarchies of each of these institutions. The study established that women were generally fewer in most management or senior positions, except in some IGOs. Gender-biased occupational segregation can possibly be ascribed either to demanding institutional promotion guidelines, including extensive educational

qualifications, publications, the number of postgraduate students supervised and research funds attracted to the university, or to the lower numbers of female students taking up university ocean science courses (Ojwala et al. 2022). All these prerequisites of higher level management positions are more likely to favour men than their women counterparts, who are more likely assumed to have additional responsibilities such as caring roles, resulting in work-family conflicts (Buckingham 2020; UN Women and ILO 2021). Therefore, it is recommended that the ocean science institutions carry out regular gender analyses to keep track of representation and avoid unconscious biases that may arise when women are excluded from decision-making positions and ocean management plans.

With regard to ocean governance, even if women are represented in equal proportions, if their representation is not felt and their voice not heard,<sup>8</sup> this does not constitute equality (Agarwal 2010; UN Women 2014; Djerf-Pierre and Edström 2020). These inequalities limit the participation, decisionmaking and voice of women in ocean management and governance negotiations, projects and policies (GEF 2017; UN Women 2018b). According to the European Institute for Gender Equality (EIGE 2016, p 16), "gender equality is not only about complying with legal requirements or individual cases, but also sheds light on working conditions and career path." It matters for all categories of staff beyond traditional distinctions between permanent and non-permanent staff. Within this context, these findings call for in-depth qualitative research to determine the reasons why there has been slow, no, or very little progress in achieving gender equality in these institutions.

## Conclusions

This study has established baseline gender-disaggregated data in major institutions responsible for ocean science and management in Kenya. The study presents the current status of gender (in)equality in ocean science in Kenya and identifies patterns of bias at different levels across institutions. There is clearly much work to do if gender equality is to be achieved in ocean science in Kenya. A key finding is that gender equality cannot be achieved by including women only in junior positions to check the gender box according to the Kenyan Constitution. Women need to be equally represented at all levels in an organisation's structure.

*Acknowledgements* — The author is grateful to the Nippon Foundation for their funding of the World Maritime University (WMU)-Sasakawa Global Ocean Institute and the Department of Fisheries and Oceans (DFO) Canada for their generous funding of the 'Empowering Women for the United Nations Decade of Ocean Science for Sustainable Development Programme.' My sincere gratitude goes to my supervisors Prof Momoko Kitada, Prof Francis Neat and Prof Susan Buckingham, for their support and insightful comments that helped improve this manuscript, and to Prof Ronan Long and Nancy Gitonga for help in building networks and establishing contacts with the targeted institutions, as well as for

<sup>8</sup>See <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2018/SDG-report-Chapter-3-Why-gender-equality-matters-across-all-SDGs-2018-en.pdf>

guidance during the fieldwork. I appreciate all the institutions that participated in this study, for their time and cooperation, particularly the human resource personnel for providing requested information and data. I thank Dr Sarah Mahadeo for helping with the map. I am grateful to the anonymous reviewers for their insightful comments that greatly improved the manuscript.

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